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Ambient Air Pollution in Georgia - Challenges of European Integration

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Introduction

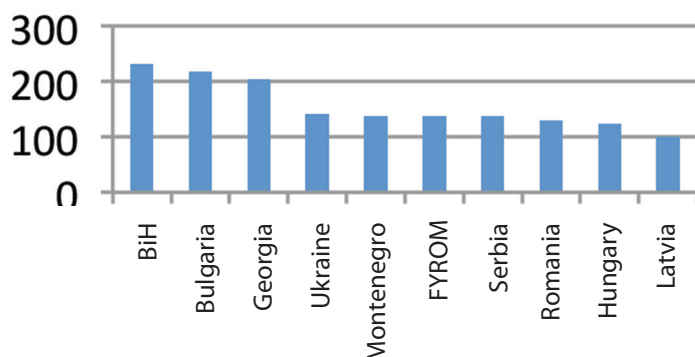
Ambient air pollution is one of Georgia's most acute environmental challenges, one with a significant impact on human health. The Association Agreement between Georgia and the EU is a major tool for improving air quality and decreasing the risks of air-borne diseases, as it requires Georgia to approximate legislation with six major EU directives on air pollution by the end of 2023. The EU-Georgia Association Agenda 2017-2020 and the Association Agreement oblige Georgia to "enhance approximation with the EU environmental acquis in environmental governance" as well as "integrating environment into other policy areas".

Georgia's efforts to approximate its legislation in the field of air quality improvement are lagging behind and are being ineffectively implemented, especially in terms of integrating the environment in other policy areas. The Association Agenda 2014-2016 requirements - that Georgia create a roadmap for the ratification and implementation of the Gothenburg Protocol and to fully implement the National Environmental Action Plan 2012-2016 (NEAP2), including the improvement of fuel quality and development of the public transport sector - have not been fulfilled.

Currently the concentration of major air pollutants - particulate matter (PM_{2.5} and PM₁₀) - is more than double the recommended average annual mean in Georgian urban and rural areas, according to the World Health Organization (WHO). The 2017 WHO report "Monitoring Health for the Sustainable Development goals" underlines that Georgia is in third place in Europe in terms of the mortality rate attributed to indoor and outdoor air pollution (per 100 000 people). Several alarming studies highlight air pollution's impact on the Georgian economy. For example, the World Bank country environmental outlook (2015) estimates an annual cost of health impacts associated with particulate matter of up to 4.3% of GDP.

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Mortality due to indoor and outdoor air pollution per 100 000 inhabitants



The 2018 Georgian State Audit report found that 120 million GEL were spent from the state budget in 2016 for the treatment of diseases related to air pollution,. This represents just a fraction of the cost burden for the Georgian population.

The challenges of effective ambient air quality monitoring

Georgia’s existing air quality management system does not comply with EC directives 2008/50 and 2004/107 in terms of management, limit values, network design and operations standards, sampling, analysis and reporting requirements. Despite the number of newly-installed automatic stations all over the country, the National Environmental Agency, the body responsible for monitoring, failed to provide a full-scale and easily-understandable picture of air pollution in Georgia.

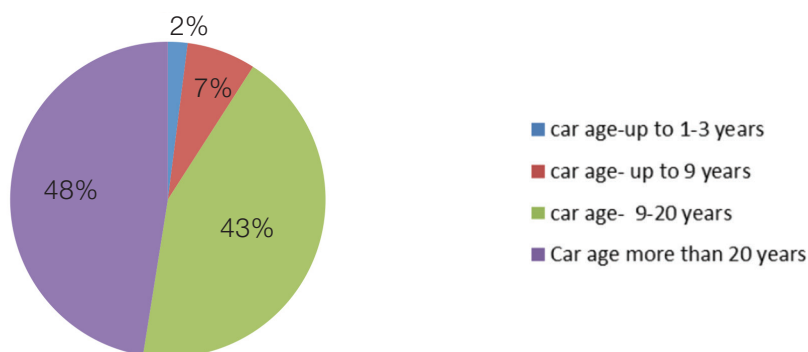
The government claims that air pollution is moderate and comparable with other eastern European countries. However, 2017 data from automatic stations in Tbilisi show that the Maximum Allowable Concentrations (MAC) for ground ozone sulphur dioxide, nitrous oxides and carbon monoxide exceed national limits by 1.5-2 times. The Georgian MACs for these pollutants are significantly lower than the EU limit values for these pollutants.

Georgia does not have standards for two of the most important pollutants, PM₁₀ and PM_{2.5}, and the NEA measures it against European limit values. However, in the capital and in other major Georgian cities (Batumi, Rustavi, Kutaisi), particulate matter exceeds European limits by at least 1.5-1.7 times. It should be noted that EU limit values are half as strict as WHO requirements, including PM₁₀, PM_{2.5} and O₃. Therefore, the EU’s Seventh Environmental Programme (2013-2020) requires that member states ensure that by 2020, “the outdoor quality in the EU significantly improve, making closer to WHO recommendations” and not closer to the EU limits.

The NEA been also been unsuccessful at establishing new standards for a number of air pollutants (PM₁₀ and PM_{2.5}, sulphur, nitrogen, carbon oxides, polycyclic aromatic hydrocarbons, Cadmium, nickel and other substances). Likewise, it has not introduced harmful substances forecast and monitoring modelling systems which, according to the Association Agreement, were supposed to be introduced by the end of 2017.

Air pollution from transportation and the means to address it

**Vesicle fleet composition by years
(Ministry of Internal Affairs, Georgia, 2016)**



According to the National Report on the State of the Environment of Georgia, at least 75% of air pollution (NOx, sulfur oxides, O₃) comes from the transport sector. The increased emissions from the transportation sector, namely from vehicles, caused by the fact that overaged vehicles, lack of public transport and problems with fuel quality. The new technical safety regulation, requires that all vehicles pass safety testing by start by January 1, 2020, will not mitigate the situation. According to the requirements for the inspection,¹ vehicles can pass the first inspection with damaged gas emission systems, without a catalytic converter (if applicable) and if they emit a higher concentration of carbon monoxide than the level set by the vehicle producer. This clause, gives possibility to almost 80% of vehicles operating in the country to pass technical inspection, without measuring the environmental impact (pollution and noise.)

Fuel quality is another issue of concern. Since January 1, 2017, petrol in Georgia contains 10 mg/kg of sulphur (the so-called Euro V standard. While Diesel corresponds to Euro III standard (100mg/kg of sulphur). It is expected that after 2019 diesel will comply with the Euro IV standard (50 mg/kg). In the meantime, at least 30% of the vehicles in the country operate on diesel.

The Ministry of Environment does not check fuel quality compliance for aromatic hydrocarbons and benzol with the above-mentioned standards due to the absence of technical capacities. In 2016-2017, the ministry carried out only 30 checks of petrol and diesel samples out of the approximately 1000 petrol stations

¹ <https://matsne.gov.ge/ka/document/view/3880278>

in the country, which is clearly insufficient. Meanwhile, it has been revealed that the ministry discovered in December 2017 that the sulphur content in diesel sold at some petrol stations exceeded the standard by three times; however, this was never reported to the public.

Emissions from Industrial sources

It is estimated that 65% of particulate matter is emitted from the industrial sector. Indicative monitoring carried out by the National Environmental Agency showed that Rustavi, Kaspi, Zestaphoni, Chiatara and Tkibuli are exposed to heavy air pollution from the industrial sector. For example, in Zestaphoni, due to the old ferroalloy plant, the concentration of MNO_2 exceeds the MAC by five times.

EU Directive 2010/75/EC on large combustion plant new emission standards will come into effect in September 2018 for new installations; it will start applying to existing installations in 2026.

In 2017, the government issued a permit for the Gardabani Coal Power Plant to be operational by 2024. However, the government did not notify project sponsor that the plant should comply with the requirements for best available technologies, as identified under the articles (2017 14(3) – (6) and 15 (2)-(4)) of 2010/75/EC, in 2026 .

National Environmental Action Plan (NEAP) and ambient air quality

The Association Agenda 2014-2016 requires the full implementation of NEAP 2 (2012-2016), which is a commitment to improving ambient air quality through the improvement of air quality monitoring, reducing industrial emissions through modern energy saving technologies and reducing vehicle emissions through the introduction of relevant instruments. However, the results of the NEAP 2 implementation are not impressive.

According to the State Audit of Georgia's 2018 report "on the efficiency of activities to combat ambient air pollution in Tbilisi from the transport sector in 2016-2017", the measures implemented did not address the country's challenges. The Public Defender office's 2018 report to parliament underlines the inefficiency of existing regulations in the air quality sector, as well as the inability to assess the impact of air pollution on the health of the country's population.

The draft of the NEAP3 for 2017-2020, elaborated in accordance with the EU Association Agreement (article 304), also defines three major aims, including the improvement of the state system of emissions inventory and the establishment of a modelling system; decreased emissions from different sectors of the economy; and the development of an air quality monitoring and evaluation network. However, NEAP3 underlines the lack of human and financial resources, as well as the lack of support for legislative changes from all governmental institutions. It also notes the active resistance from the business sector when it comes to the improvement of ambient air quality.

Recommendations

A major problem, alongside the lack of technical capacity and human and financial resources, is the endless reforming and restructuring of the environmental governance system in Georgia, which is done without proper justification for the changes. This policy significantly weakens the government's ability to protect the environment.

In order to ensure successful reform in the sector, the government needs to make the implementation of environmental acquis in the field of air protection a priority. The approximation of the air legislation with EU law should be accompanied by several activities, including:

- Adopt the National Action Plan on Air quality improvement, with allocated financial resources to address indoor and outdoor pollution and promote the best available technologies and practices among industry and municipalities;
- Develop and implement specific ambient air protection plans for most problematic industrial areas, based on the polluter pays principle;
- Carry out nationwide research to reveal hotspots of air pollution related diseases within the country and plan joint activities involving the Ministry of Health, Labour and Social Affairs, and the Ministry of Environment Protection and Agriculture;
- Support the development of integrated public transport schemes for major Georgian cities;
- Introduce economic instruments, subsidies and incentives to decrease the impact on the environment from vehicles, based on the polluter pays principle;
- Increase fuel quality to meet the Euro VI standard by the end of 2018 and ensure proper monitoring of imported fuel quality;
- Ensure proper technical inspection for all vehicles, including the impact on the environment, by the end of 2019;
- Ensure public access to ambient air quality monitoring data and analysis and carry out information campaigns on the impact of air pollution on health and how to prevent it.

The European Union, in its relations with Georgian authorities, should continue to prioritize the problems related to ambient air pollution in all policy dialogues. It should also activate the topic in terms of donor coordination and joint action. Increased efforts should be given to the support of environmental authorities through specific capacity building and technical assistance programmes to ensure proper air quality management. These activities may also include pilot programmes for largely polluted areas, through the instalment of appropriate emissions control systems and the development of site-specific mitigation measures.

