

## **EU ENVIRONMENTAL POLICY OF AIR POLLUTION: ITS INFLUENCE ON ROMANIA, POLAND AND BULGARIA**

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*Abstract: The purpose of this paper is to look at the consequences of the application of the EU air pollution policy on three former communist countries, Romania, Poland and Bulgaria. As former communist countries, they have a special situation, as the communist regime has promoted industrial development. The industries have had negative influences on the environment through emissions that have polluted the air. Compared to Romania, Poland and Bulgaria have a worse situation, as is seen from what is written about them in the media. The air pollution policy draws attention to the dangers of this type of pollution for human health.*

*Keywords: emissions, communism, nitrogen dioxide, ozone, health.*

### **1. Introduction: the EU Air Pollution Policy**

The EU Air Pollution Policy draws attention to one of the most significant aspects in the lifestyle of EU citizens, personal health, and the way it is affected by the very air we breathe:

The human toll for poor air quality is worse than for road traffic accidents, making it the number one environmental cause of premature death in Europe, with over 400 000 premature deaths every year. It also impacts on quality of life by causing or exacerbating asthma and respiratory problems. Air pollution causes lost working days, and high healthcare costs, with vulnerable groups such as children, asthmatics and the elderly the worst affected. It damages ecosystems through excess nitrogen pollution (eutrophication) and acid rain.

([http://ec.europa.eu/environment/air/index\\_en.htm](http://ec.europa.eu/environment/air/index_en.htm))

The fact that the majority of the population of EU states lives in cities makes pollution and air quality a significant issue. The EU is the international organization with the most laws related to the environment: over 500 Directives, Regulations and Decisions. The environment directly affects the health of the citizens of the countries, through the issues caused by acid rain, thinning ozone layer, noise pollution, water pollution, and, apparently less visible, by air pollution. The EU environmental policy began with the Paris Summit meeting in 1972, with the Environmental Action Programme becoming adopted in 1973.

The EU Air Pollution Policy has appeared in the 1970s and it was concerned with the harm caused by fuel from the domains of transport and energy:

Since the early 1970s, the EU has been working to improve air quality by controlling emissions of harmful substances into the atmosphere, improving fuel quality, and by integrating environmental protection requirements into the transport and energy sectors.

([http://ec.europa.eu/environment/air/index\\_en.htm](http://ec.europa.eu/environment/air/index_en.htm))

The policy then dealt with air pollutants, and, as the problems with air quality did not stop, in 2013, another policy was adopted by the European Commission: the Clean Air Policy

Package. The package included objectives set for 2020 and 2030 by the Clean Air Programme. The Communication *A Europe that protects: Clean air for all* was adopted by the Commission in 2018.

The air pollution policy includes several policies, in fact, in the following areas:

- Clean Air Programme, which contains a thematic strategy on air pollution, an ambient air quality directive, a national emission ceilings directive, sector-specific pollution control measures, and a medium combustion plants directive.
- Air quality, which includes the fitness check:

The European Commission has initiated a fitness check of the two EU Ambient Air Quality (AAQ) Directives (Directives 2008/50/EC and 2004/107/EC).

These Directives set air quality standards and requirements to ensure that Member States monitor and/or assess air quality in their territory, in a harmonised and comparable manner.

([http://ec.europa.eu/environment/air/quality/aqd\\_fitness\\_check\\_en.htm](http://ec.europa.eu/environment/air/quality/aqd_fitness_check_en.htm))

According to Air quality in Europe — 2017 report, the Clean Air Policy has set objectives to lower the level of emissions at national level for member countries:

The Clean Air Policy Package for Europe, published by the European Commission in late 2013, aims to ensure full compliance with existing legislation by 2020 at the latest, and to further improve Europe's air quality, so that by 2030 the number of premature deaths is reduced by half compared with 2005 (European Commission, 2013). In this context, the EU has recently agreed on a revised National Emissions Ceilings (NEC) Directive (EU, 2016). It sets 2020 and 2030 emission reduction commitments for SO<sub>2</sub>, NO<sub>x</sub>, non-methane volatile organic compounds (NMVOCs), NH<sub>3</sub> and PM<sub>2.5</sub>. The more ambitious reduction commitments agreed for 2030 are designed, in line with the Clean Air Policy Package, to reduce the health impacts of air pollution by around half compared with 2005. Further, the Directive requires that Member States draw up National Air Pollution Control Programmes that should contribute to the successful implementation of air quality plans established under the EU's Air Quality Directive.

- Reduction of national emissions, whose main directive raises awareness on pollutants and their effects on human health:

The main legislative instrument to achieve the 2030 objectives of the Clean Air Programme is Directive 2016/2284/EU on the reduction of national emissions of certain atmospheric pollutants which entered into force on 31 December 2016. This Directive sets national reduction commitments for the five pollutants (sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter) responsible for acidification, eutrophication and ground-level ozone pollution which leads to significant negative impacts on human health and the environment. (<http://ec.europa.eu/environment/air/reduction/index.htm>)

- The EU and international air pollution policy, which states that the member states should work together to control air pollution:

In the international context, the EU Member States engaged together with Central and Eastern European countries, the United States and Canada to control international air pollution under the Gothenburg Protocol to the Convention on

Long-Range                      Transboundary                      Air                      Pollution.  
(<http://ec.europa.eu/environment/air/policy/index.htm>)

- Air pollution from the main sources: from road vehicles, from non-road mobile machinery, from maritime transport, air emissions from agriculture, from energy and industrial sources, and industrial emissions.

Within the Clean Air Programme, the EU countries are urged to collaborate in order to solve the air pollution problems at the following levels: economy-related, decision-making, policy areas and citizens' collaboration.

On 16 and 17 November 2017 the European Commission convened a first EU Clean Air Forum in Paris.

This first Clean Air Forum did not only see the launch of the European Clean Air Index, it also concluded with a clear message: solutions to improve air quality are within reach. But to tackle air pollution successfully, we need to work together across economic sectors (transport, energy, agriculture, and industry), across decision-making levels (European, national, regional, and city level), across policy areas (environment, climate and energy, mobility, agriculture, and fiscal policy) and together with citizens. Cleaner air will not only improve the health of citizens, it also makes good economic sense.  
([http://ec.europa.eu/environment/air/clean\\_air/forum.htm](http://ec.europa.eu/environment/air/clean_air/forum.htm))

The EU member countries that have a communist history are most in need of an air pollution policy, as they had been affected negatively by the industrialization promoted by the regime (Rekacewicz 2000). This paper will analyse the way air pollution policies of the EU have influenced three former communist countries: Romania, Poland and Bulgaria, in order to follow the evolution of specific cases. During the communist regime, there was no environmental policy (Grabow 2014). The research question of this paper is how have these countries adapted to the environmental policy of air pollution, following a regime that did not favour one? Has there been a major change? What are the causes for this state of affairs?

The EU controls the effects of these policies, and whether the member states respect them: "The EU Member States have to submit annually their air quality data to Airbase, the European Air Quality Information System." (Tucaliuc and Verestiuc 2015: 347)

## **2. Air Pollution Policies Implementation Reviews for Romania, Poland and Bulgaria**

The Air Pollution in Romania: Real-time Air Quality Index Visual Map lists the large majority of cities on the level of good pollution level, with air quality considered satisfactory (<http://aqicn.org/map/romania/>). For Poland, the real-time Air Quality Index Visual Map lists the majority of cities as moderate, unhealthy for sensitive groups and good. For Bulgaria, the real-time Air Quality Index Visual Map does not include information on too many cities, and there are a few listed as moderate and good.

### **2.1. Romania**

Regarding the implementation of the air policies in Romania, we have information regarding the "Directive 2008/50/EC on ambient air quality and cleaner air for Europe and the Directive 2004/107/EC of the European Parliament and of the Council relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air [...] transposed into the national legislation by the Law no. 104/15.06.2011 regarding air quality." (Tucaliuc and

Verestiuc 2015: 348) EU factsheets document the decrease of air pollution in Romania, with respect to emissions, yet problems in areas regarding ozone and nitrogen dioxide persist, according to *the EU Environmental Implementation Reviews: Highlights* document:

In Romania, the emission of several air pollutants has decreased significantly. The emissions from these pollutants are within the currently applicable national emission ceilings. These trends must continue if Romania is to achieve compliance with air quality standards, too. At the same time, air quality in Romania continues to cause concern. For 2013, the European Environment Agency estimated that a number of premature deaths were attributable to concentrations of fine particulate matter, ozone and nitrogen dioxide. This is also due to exceedances above the EU's air quality standards. Romania needs to step up its efforts to meet EU air quality standards.

([ec.europa.eu/environment/eir/pdf/factsheet\\_ro\\_en.pdf](http://ec.europa.eu/environment/eir/pdf/factsheet_ro_en.pdf))

There is systematic monitoring by air stations across the country which reveals that the level of atmospheric pollution remains high in many areas in Romania:

- Most exceedances were recorded for PM, SO<sub>2</sub>, NO<sub>x</sub> and selected heavy metals
- Stationary internal combustion engines are some of the leading sources of air pollutants in Romania
- WHO estimates that outdoor air pollution causes 9600 premature deaths annually (<https://wedocs.unep.org/bitstream/handle/20.500.11822/17088/Romania.pdf?sequence=1&isAllowed=y>)

The areas with problems for air quality which are monitored in Romania are the following: the pollution from industries, transport, and outdoor open burning. Private car ownership is being discouraged due to high cost of fuel, and cars with high emission of pollutants are prohibited. Policies for air pollution prevention include:

The Clean Air For Europe (CAFÉ) Directive is the principal legal instrument at European Union level relating to air pollutants, and thus seeks to protect the environment and human health. [...]

Industrial emissions within the European Union are regulated under the Industrial Emissions Directive (IED), which was issued on 21 December 2007. [...]

EU regulations introduce different emission limits for *compression ignition* (diesel) and *positive ignition* (gasoline, NG, LPG, ethanol,...) vehicles. [...]  
(<https://wedocs.unep.org/bitstream/handle/20.500.11822/17088/Romania.pdf?sequence=1&isAllowed=y>)

## 2.2. Poland

Causes for the air pollution issues in Poland are listed in an article from Financial Times: “a toxic mix of outdated heating systems, heavy traffic and the economy's dependence on coal”. As to why the actions against air pollution were ineffective, the following reasons are given:

the air quality plans are too vague, quality requirements for solid fuels are still missing and the standards for stoves only apply to new devices.”  
(<https://www.ft.com/content/b1d8794a-17d8-11e8-9e9c-25c814761640>)

Another problem has to do with the use of coal for heating people's houses in Southern Poland,

causing “high levels of particulate matter PM2.5 and PM10, two key pollutants” (<http://www.euronews.com/2017/11/30/poland-among-europe-s-worst-for-smog>).

The fact that air pollution persisted as a problem in Poland was explained by the division among political parties and thus lack of coherent action and, also, the economic issues which were in need of great attention have taken away from the significance that should have been given to the environmental policy (Millard 2007: 145).

*The EU Environmental Implementation Reviews: Highlights* document for Poland summarizes its situation regarding air pollution after adopting EU policies as follows:

Air quality in Poland’s urban areas is a major concern. In 2014, EU air quality standards for particulate matter (PM10) were breached in 42 zones and for benzo[a]pyrene in all zones. Often, these standards were exceeded by a very large margin. Furthermore, 24 air-quality zones have indicated excessive levels of fine particulate matter (PM2.5), for which the limit value only became binding in 2015. Nitrogen dioxide (NO2) limits are also exceeded (in four agglomerations). The target values and long-term objectives regarding ozone concentrations were not met in several air-quality zones in 2014, including three zones in which the related target values were also exceeded. In addition, target values for annual mean concentrations of arsenic were exceeded in two air quality zones.

The European Commission is launching infringement procedures covering all the Member States concerned, including Poland, to follow up on persistent breaches of air quality requirements (for PM10 and NO2), which have severe negative effects on health and the environment. The aim is to put in place adequate measures to bring all zones into compliance.

In particular, it is striking that, given such a grave air pollution problem, Poland has no standards for solid fuels sold on the market or emission standards for new boilers. The prevalence of sub-standard boilers combined with the availability of poor quality coal are major factors impacting air quality in most zones in Poland. Without appropriate, tailored measures to reduce the pollution coming from major contributing sectors, it is very unlikely that the continuous and severe breaches of EU air quality standards will stop. ([ec.europa.eu/environment/eir/pdf/factsheet\\_pl\\_en.pdf](http://ec.europa.eu/environment/eir/pdf/factsheet_pl_en.pdf))

Poland has achieved a reduction of the levels of emissions of acidifying pollution:

Poland has reduced its contribution to regional transfrontier pollution in recent years, achieving large reductions in its emissions of acidifying air pollutants in line with the protocols to the UN-ECE Convention on Long-range Transboundary Air Pollution (i.e. Oslo, Sofia, Gothenburg, Aarhus). ([www.oecd.org/environment/country-reviews/2958428.pdf](http://www.oecd.org/environment/country-reviews/2958428.pdf))

### 2.3. Bulgaria

The Health and Environment Alliance ([https://env-health.org/.../health\\_briefing\\_air\\_bulgaria\\_eng.pdf](https://env-health.org/.../health_briefing_air_bulgaria_eng.pdf)) draws attention to one of the causes of air pollution in Bulgaria, and in Europe: coal power plants and their dangerous emissions. After the communist period, the state was not strong administratively and the issues of unemployment could not help solve the air pollution issues, such as the nuclear power plants which were only closed in 2004 although they had been found unsafe since 1990. The higher number of cars growing in the 1990s and 2000s led to the use of leaded fuel polluting the air of the cities. Bulgaria is in a similar situation to Poland, and they both appealed to the European Commission since the EU rules for protecting the air quality affected the functioning of coal-fired plants,

which could threaten the countries' economy: "Bulgaria, where coal-fired power plants produce about 40 percent of its electricity, has said the new rules pose risks to its energy security and economic competitiveness." (<https://www.reuters.com/article/us-bulgaria-coal/bulgaria-joins-poland-in-appeal-against-eu-pollution-crackdown-idUSKBN1EZ20I>)

*The EU Environmental Implementation Reviews: Highlights* document for Bulgaria summarizes its situation to the reaction to EU air pollution policies as follows:

Measurements show that Bulgarian citizens all over the country breathe air that is considered harmful to health, with significant economic impacts for labour productivity and the health-care system. Although, in general, concentrations of PM2.5 and PM10 have declined over the years, they remain much higher than the limits set by the EU and the World Health Organization to protect the population's health. Bulgaria has the highest concentrations of urban PM2.5 of all EU-28 Member States, as well as the highest PM10 concentrations. This makes Bulgaria the country with the highest share of external costs associated with air pollution in the EU, resulting in the loss of more than 2 million working days and more than 11 thousand premature deaths per year. ([ec.europa.eu/environment/eir/pdf/factsheet\\_bg\\_en.pdf](http://ec.europa.eu/environment/eir/pdf/factsheet_bg_en.pdf))

The main consequences of the policies' influence was the lowering of PM 2.5 and PM10 concentrations.

### 3. Conclusions

The process of adopting the EU air pollution prevention policies is hindered in Poland and Bulgaria by the economic reasons, as jobs and functioning of plants are necessary in order to ensure a level of employment and of the functioning of electricity. These are conflicting factors with respect to the adoption of EU air pollution strategies. All three countries are in the process of adaptation to the air pollution policies. According to Reviews of Implementation Policies led by the EU, Romania, compared to Poland and Bulgaria, has a better air quality when it comes to emissions, yet ozone and nitrogen dioxide are still a cause for concern due to their high levels. Nitrogen dioxide is also high in Poland, as well as ozone. Bulgaria and Poland have concentrations of PM 2.5 and PM10 higher than EU standards, although the levels have declined over the years in the case of Bulgaria. The warnings regarding health issues related to air pollution policies are still valid for all three countries. For Romania, we notice the effects of the reduction of national emissions policy and air quality policy, as the EU Review claims that emissions have lowered and that the air quality has improved. For Bulgaria and Poland, these policies have not had such a strong impact so as to significantly lower pollution. The Review by the EU refers to urban air quality, since the majority of the EU citizens live in cities. One of the policies that shows consequences in the three countries is the clean air policy, which tries to lower the emissions at national level, and which has had the best results in Romania, compared to Poland and Bulgaria, where the process is slower. Policies promoting cleaner transport are being developed in Bulgaria by the Ministry of Transport, and programmes attempting to reduce ozone-depleting substances, and measures to reduce the level of lead-containing gasoline. Poland is a country for which there is the highest level of complaints related to air pollution, due to "exceedances of PM 10 limit values", according to EU Environmental Implementation Review.

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