III International Conference
„ECOLOGY OF URBAN AREAS" 2013

AIR QUALITY IN URBAN AREAS IN SERBIA: CURRENT STATE AND LEGAL PROTECTION

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ABSTRACT

Satisfactory level of air quality is one of key preconditions for the survival of all living organisms. Due to rapid industrial development, increased traffic and everyday use of toxic substances in industry, agriculture, health care, pharmacy and cosmetics, air pollution, particularly in urban areas, has become a serious global issue. The consequences of this environmental, legal, social, economic and medical problem are long-lasting and devastating. They affect environment as a whole and its integral parts – air, water, soil, living organisms and the entire humankind, including future generations, and represent grave violations of human right of healthy living environment. Annual Reports of Environment Protection Agency show that air quality in the zone of the Republic of Serbia and its agglomerations of Beograd, Bor, Niš and Novi Sad is assessed as "over polluted", which means that tolerable values of one or more air pollutants have been exceeded in these areas, causing serious concern of experts and general public. The authors of this paper provide a brief overview of present state of air quality in Serbia, critically analyze current legislative framework for its protection and explain the mechanism of state reaction to the violation of legal provisions relevant to air protection.

Key words: *Air Quality, Environment, Pollution, Law, Protection.*

INTRODUCTION

Air is one of three mediums of living environment for numerous organisms and appropriate oxygen level makes it the only surrounding where humans can survive. As a climatic, non-biotic ecological factor, air has an exceptional influence on some organisms and populations, as well as on ecosystem as a whole. Air comprises a mechanical mixture of gases, which envelops the Earth creating its atmosphere. It includes circa 4/5 of Nitrogen N_2, 1/5 of Oxygen O_2 and a small quantity of other gasses such as Argon Ar, Carbon-dioxide CO_2, Neon Ne, Methane CH_4, Ozone O_3, water vapor and various impurities (Vig and Gajinov, 2011). In the lower layer of the atmosphere, where life is maintained and various organisms are surviving, the composition of the air is relatively stable. Unchanging chemical and physical characteristics of air are significant for normal functioning of all living organisms and clean air represents a precondition for healthy life of humans and entire ecosystems. But, the troubles appear when the balance of its ingredients is violated (Vig and Gajinov, 2011).

commonly caused by anthropogenic sources of pollution. However, in the past couple of decades, the modifications of air quality tend to go beyond local borders and obtain global character and importance. Intensive spreading of urban and industrial zones commenced in the times of industrial revolution. Nowadays, the highest concentration of human population can be measured in urban areas. In these artificial ecosystems, regular composition of air is altered because of an increasingly high percentage of air pollutants. These pollutants are launched into the atmosphere from industrial and communal complexes, car engines, cooling devices etc. Due to these sources of pollution, the air is filled with CO_2, CH_4, SO_2, atmospheric oxidants (nitrate oxides NOx, O_3 and secondary photo oxidants), chlorofluorocarbons CFCs (commonly known as freons), hydrogenous halides (HF, HCl, HBr, HI), as well as a large amount of dust and ashes. Increased concentration of these substances in inhabited industrial areas represents one of the signs of anthropogenic pollution of atmosphere.

Various gases and hard substances are mixed together circulating through air masses. Molecules of water keep these substances together, particularly during the winter, in the period of increased air humidity, causing dense layers of fog. These fogs and mists, combined with smoke arising from a multitude of industrial and other funnels represent typical features of large industrial urban centers. Due to sunlight and presence of ultraviolet UV radiation, a stratum of photo-chemical mist is also formed in the atmosphere that is over-polluted with car exhaust gases and smoke from car engines and industrial funnels, such as NOx at first place (Kerr and Seckmeyer, 2002).

Deterioration of forests in the most developed industrial areas of Europe and North America, caused -ground parts of plants, particularly on the leaves in the canopy layer of the trees, has been taking place since the times of industrial revolution. Sulfuric compounds, primarily SO_2 that are extremely dangerous for living organisms, water, soil, architectural objects and monuments. Under these artificial atmospheric conditions, constant increase of the concentration of CO_2, CFCs, CH_4 and NOx

ocean level and flooding of coastal regions. At the same time, more and more natural habitats are being destroyed and left with scarce vegetation as the consequence of the process of anthropogenic use cal issues of global importance.

The symptomatology of damages caused by atmospheric pollutants is extremely diverse and nonspecific. A particular pollutant may produce different effects on different organisms, which depends on whether they are resistant or submissive to its influence and the presence of different pollutants may produce equal symptoms. Synergic effects of pollutants and specific climatic conditions of environment are also common and . Polluted air causes extremely severe respiratory disturbance and may lead to the occurrence of bronchitis. The so called

collected by The European Environmental Agency1, nearly 20,000 people per year die in Europe due

x and CFCs, disappearance of which produces a multitude of negative consequences. The level of UV radiation in the troposphere is increased (Dahlback, 2008), which affects human health (Norval, et al., 2007) and causes skin cancer, eye lens cataract, weakness of immune system, decrease of bio production, increase of greenhouse effect, damaging of some materials etc.2 Conservation and protection of air i.e. atmosphere contributes to the preservation of climate, which is considered one of fundamental strategic directions on a global level, together with the conservation of biodiversity. Accordingly, air protection is relevant to the conservation of all elements of living environment, which are closely interrelated and depend on each other.

STATE OF AIR QUALITY IN URBAN AREAS IN SERBIA

Data presented in the Report on Air quality in Serbia for 2011, published by Environmental protection Agency in 2012, clearly show that there is reason for concern in this area of environmental protection. According to the findings of this national body in charge of monitoring air quality, total levels of various dangerous pollutants such as SO_2, NO_2 and powder substances have increased in comparison to their values from previous years. Namely, total amount of SOx released on the territory of Serbia was circa 7% bigger in 2011 than in 2010, total amount of released NOx increased for around 15% and an increase in total quantity of powder substances in the air was also detected. Thermal plant

1See: http://www.eea.europa.eu/themes/air/air-quality/more-about-air-pollutants/ozone-1/impacts/costs-of-ozone-pollution, 22.08.2013.
2 See: http://www.ozonecell.com/viewsection.jsp?lang=0&id=0,165, 22.08.2013.

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y keep emitting the largest quantities of these hazardous substances in our country.

Exceeding of tolerable or limit annual value of pollutants was noted in 22 cases out of 124. In 12 cases, there was an increase in the level of PM_{10}, in 7 cases in the level of NO_2 and in 3 cases in the level of SO_2.These finding show that suspended particles PM_{10} represent dominant pollutants in Serbia, which means that the concentrations of suspended particles and NOx practically determine the quality of air in the Republic of Serbia. In accordance with the categorization of air into three categories, depending on its purity, which is set by the Law on Air Protection, the quality of air in Serbia, as a whole, can be described as the air of III category, which means over-polluted air. Air of III category or over-polluted air, containing suspended particles PM_{10}

-polluted air containing intolerable amounts of other pollutants

at following spots: Kopao -Ashes Deposit, Kostoalc, Smederevo-

-Institute for Fruit Production,

-Sveti Sava School, Valjevo and Vranje. However, final assessment of air quality in Serbia, conducted in accordance with relevant rules of estimation, shows that it is over-polluted.3

LEGAL PROTECTION OF AIR QUALITY IN SERBIA – CURRENT LEGAL FRAMEWORK

International documents

The following international documents regulating the issue of global air pollution can be singled out as the most important: 1) The 1979 Geneva Convention on Long-range Transboundary Air Pollution4, ratified by SFRJ in 1986, with additional protocols such as: a) The 1984 Geneva Protocol on Long-term Financing of the Co-operative Program for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP), b) The 1991 Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes; c) The 1998 Aarhus Protocol on Persistent Organic Pollutants (Bull, 2003), d) The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-Level Ozone and 2) The Vienna Convention for the Protection of the Ozone Layer5 ratified by the Republic of Serbia in 1990 with the Montreal Protocol on Substances that Deplete the Ozone Layer6, ratified by the Republic of Serbia in 2004 (Vig and

The Geneva Convention obliges its member states to promote environmental protection through the protection of air from pollution and gradual decrease and suppression of pollution, to develop policies and strategies for combating release of pollutants in the air, to exchange information relevant to air protection and pollution, to cooperate in the field of research in the area of air quality, to control the state of air quality and establish adequate mechanism for air quality control, to prescribe limit measures that would contribute to the efficiency of air protection, to develop technologies for minimization of release of pollutants and for measurement of their concentration, to participate in the

The Vienna Convention obliges its signatories to prevent the pollution of air by the substances that might damage the ozone layer, to prescribe acceptable modalities of use of substances that might deplete the ozone layer, to create a list of these substances,

3 Beograd: Ministarstvo energetike,

4 Convention on Long-range Transboundary Air Pollution, Geneva, 13 November 1979, UNTS, vol. 1302, p. 217.

5 Multilateral Vienna Convention for the Protection of the Ozone Layer (with annexes and Final Act). Concluded at Vienna on 22 March 1985, registered ex officio on 22 September 1988, UNTS, vol. 1513, No. 26164, p. 293.

6 The Montreal Protocol on Substances that Deplete the Ozone Layer

to determine the modalities of their use, import and export and to keep records of trans-boundary and poll

The European Union7 has also dedicated a significant amount of legislative documents to the issue of air quality and air protection (Vig and Gajinov, 2011). Actually, air quality seems to be one of the areas in which the EU has been most active. 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 sectors8. European air pollution policy has a long history and some notable successes to its name. The most recent wave of policy was launched in 2005 with the Thematic Strategy on Air Pollution designed to make substantial progress towards the long-term EU objective: to achieve levels of air quality that do not result in unacceptable impacts on, and risks to, human health and the environment9. Although the Republic of Serbia is not an EU member state, being familiar with and acting in accordance with the sources of EU law pertinent to environment protection in general, including those regulating air quality and pollution, is a necessary step on the road of our country towards European integrations. pertinent to air protection have been adopted in the past couple of decades, including the following: 1) Directive 2008/50/EC on ambient air quality and cleaner air for Europe, 2) Directive 96/62/EC on ambient air quality assessment and management, 3) Directive 1999/30/EC relating to limit values for sulfur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air, 4) Directive 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air, 5) Directive 2002/3/EC relating to ozone in ambient air, 6) Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, 7) Council Decision 97/101/EC establishing a reciprocal exchange of information and data from networks and individual stations measurement ambient air pollution within the Member States, 8) Directive 80/779/EEC of 15 July 1980 on air quality limit values and guide values for sulfur dioxide and suspended particulates.

Law on Air Protection

The Republic of Serbia has recently adopted a single legislative document entirely dedicated to the issue of air protection Law on Air Protection10 of 2009 with the latest amendments and alterations made in 2013. By adopting this law, the Republic of Serbia implemented the entire content of the Directive 2008/50 EC on Ambient Air Quality and Cleaner Air for Europe in its national legislation and fulfilled normative preconditions for harmonization of domestic and EU practice in this field.11 This law arranges the air quality management and establishes the measures, manners of organization and control of the protection and improvement of the quality of air as a natural value of general interest that is under special protection. However, the provisions of the Law on Air Protection are not applied in the cases of pollution caused by radioactive substances, industrial accidents and natural disasters (Art. 1). The fundamental aim of the Law is to achieve air protection through: establishment, maintenance and improvement of a single system of air quality management, preserving and improving air quality through establishing and implementation of protective measures in order to prevent or decrease harmful consequences on health and/or environment, avoiding, preventing and decreasing the pollutions that harm the ozone layer and enhance climate changes, monitoring, collecting and assessing the appropriate data on air quality, providing available data on air quality, completing duties in accordance with ratified international contracts and international cooperation in the field of protecting and improving air quality and ensuring the access of public to these information (Art. 2).

7 In further text, abbreviation EU will be used for European Union

8 See: http://ec.europa.eu/environment/air/index_en.htm, 12.08.2013.

9 Thematic Strategy on Air Pollution, Commission of the European Communities, Brussels, 21.9.2005.

10 Law on Air Protection, Official Gazette of RS, No. 36/09 and 10/13

11 u Republici Srbiji 2011. godine.

Law on Air Protection defines air as the air in troposphere at the open space that does not include air in the closed space (Art. 3). It prescribes essential empowerments (authorizations) and duties pertinent to the protection and improvement of air quality. The protection and improving of the air quality is conducted by the Republic of Serbia, autonomous province, local self-government unit, business associations, entrepreneurs, as well as by other legal or natural persons in accordance with their authorizations. Accordingly, the Law obliges business associations, other legal entities and entrepreneurs that affect or could affect the air quality while performing their activities to provide technical measures for preventing or decreasing the emission into the air, plan the costs of protecting the air against pollution within investment and manufacturing costs, monitor the effect of their activities to air quality and provide other appropriate protective measures. The quality of air and emissions are monitored by competent state administrative bodies and legal persons licence to perform these activities (Art. 4).

According to the pollution level, starting from the prescribed limit and tolerable values and based upon measurement results, the Law distinguishes three categories of air quality. The first is the category of pure or slightly polluted air, where none of the limit values of the pollutants are exceeded. The second comprises moderately polluted air, meaning that limit values of one or more pollutants are exceeded, but tolerable values are not. The third refers to over-polluted air, which means that tolerable values for one or more pollutants are exceeded. It is important to mention that if a tolerable limit has not been prescribed for a pollutant, its limit value shall be treated as the tolerable one. The categories of air quality are established once a year and the list of air quality categories by zones and agglomerations in the territory of the Republic of Serbia is adopted by the government and published in the Official Gazette, via electronic media and on the web site of the Government and the Ministry (Art. 21). The Law prescribes measures designed to contribute to the protection and improvement of air quality. So, in the zone or agglomeration where air quality is assessed as the first category, preventive measures should be implemented with the aim to prevent the emergence of air pollutants that would exceed the limit values. In the zones or agglomerations of the second category of air quality measures for decreasing air pollution are implemented in order to reach limit values or decrease below them. In the zones or agglomerations where air quality is assessed as category three, measures for decreasing air pollution are implemented in order to achieve the tolerable values for short ang long term provision of limit values (Art. 22.).

Law on Air Protection is familiar with several administrative offences (misdemeanors) that represent

Fine between 500,000 and 1,000,000 RSD will be imposed on a legal person that: 1) fails to develop t tionery sources emission, 2) fails to provide the staff training in accordance with the professional education programme, 3) performs the activities of manufacturing, maintaining and/or repairing the products containing substances that deplete the ozone layer 4) imports and/or exports and sells new products and equipment that use the controlled substances that deplete the ozone layer apart from chlorofluorohydrocarbons, 5) releases substances that deplete the ozone layer and fluorinated greenhouse gases GHGs 6) loads the systems that use fluorinated GHGs with substances that deplete the ozone layer 7) does the wash out with substances that deplete the ozone layer 8) sells and uses tanks for one-off use where the substances that deplete the ozone layer and fluorinated GHGs are stored, 9) retails the substances that deplete the ozone layer and fluorinated greenhouse gases, 10) fails to submit the data on the stationery air pollution source and each its change (reconstruction) to the Ministry, i.e. Agency, competent autonomous province body and competent local self-government unit body, 11) fails to keep records on the exercised measurement with the data on measurement locations, results and frequency, 12) fails to keep records on the type and quality of raw materials, fuel and waste in the combustion process, 13) fails to keep records on the work of machines for preventing or decreasing the pollutants emission, as well as measurement installations for emission measurement, 14) fails to perform the air quality and/or emission measurement in accordance with the Law, 15) starts the measurement before license, 16) fails to perform the air quality and/or emission measurement in accordance with the Law or 17) starts the measurement before getting the agreement by the Ministry. For this misdemeanour a fine can be declared in line

with the amount of the harm done, the value of the obligation that has not been fulfilled or the value of goods or other objects that are the subjects of this offense, up to the amount twenty times higher than these values. A responsible person within the legal person may also be found liable for this misdemeanour and can be punished with fine from 25,000 to 50,000 RSD. A legal entity that committed some of the aforementioned misdemeanours can also be imposed a protective measure

the legal person may also be imposed a protective measure by which the court forbids him to perform particular tasks for one year (Art. 81).

The Law prescribes fine from 250,000 to 500,000 RSD for the entrepreneur that: 1) fails to develop ing the stationery sources emission, 2) fails to implement the measures with the aim of decreasing the volatile organic compounds emission 3) fails to provide the staff training in accordance with the professional education programme in accordance with the Law, 4) performs the activities of manufacturing, maintaining and/or repairing the products containing icense , 5) produces substances that deplete the ozone layer, 6) imports or exports substances that deplete the ozone layer, i.e. products and equipment containing them, and which are identified by ratified international contracts from the countries, i.e. into the countries that are not the signing parties of that contract, 7) imports and/or exports and sells the substances that deplete the ozone layer and fluorinated GHGs without license, 8) imports and/or exports and sells new products and equipment that use the controlled substances that deplete the ozone layer apart from chlorofluorohydrocarbons, 9) releases substances that deplete the ozone layer and fluorinated greenhouse gases, 10) loads the systems that use fluorinated GHGs with substances that deplete the ozone layer, 11) does the wash out with substances that deplete the ozone layer, 12) sells and uses tanks for one-off use where the substances that deplete the ozone layer and fluorinated GHGs are stored 13) retails the substances that deplete the ozone layer and fluorinated GHGs, 14) fails to remove defect or disorder, i.e. to adjust the work to the new situation or fails to stop the technological process, in order to bring the emission to the allowed limits as soon as possible,15) fails to take technical-technological measures or to stop the technological process, in order to bring the concentrations of the pollutants to the prescribed limit values, 16) fails to implement the measures that can lead to the odour reduction, although the concentration of the emitted matters in waste gas is below the limit value 17) fails to submit the data on the stationery air pollution source and each its change (reconstruction) to the Ministry, i.e. Agency, competent autonomous province body and competent local self-government unit body, 18) fails to provide the regular emission monitoring and do not keep records on that, 19) fails to enable permanent emission measurement if they are prescribed for specific pollutants and/or pollution sources independently, through automatic machines for permanent measurement, 20) fails to enable control measurement of emission by an authorised legal entity, if emission measurement is exercised independently, 21) fails to provide prescribed occasional emission measurement, by an authorised legal entity, twice a year, unless exercising the permanent emission measurement, 22) fails to enable the air quality monitoring upon the order of the competent inspection body, 23) fails to keep records on measurement and data on its locations, results and frequency 24) fails to keep records on the type and quality of raw materials, fuel and waste in the combustion process, 25) fails to keep records on the work of machines for preventing or decreasing the pollutants emission, as well as measurement installations for emission measurement, 26) starts the measurement before obtaining Minis this misdemeanour a fine can be declared in line with the amount of the harm done, the value of the obligation that has not been fulfilled or the value of goods or other objects that are the subjects of this offense, up to the amount twenty times higher than these values. Protective measure of forbidding the performance of a specific activity for the period of up to three years may also be imposed (Art. 83).

Criminal Code of the Republic of Serbia

Current Criminal Code of the Republic of Serbia12, which entered into force on 1st January 2006, contains several incrimination of direct or indirect importance for the protection of environment in

12 Criminal Code of RS, Official Gazette of RS, No. 85/05, 88/05, 107/05, 72/09, 111/09 and 121/12

s are

Failure to Undertake Environmental Protection Measures (Art. 260), Illegal Construction and Operation of Facilities and Installations Polluting the Environment (Art. 262), Damaging Environmental Protection Facilities and Installations (Art. 263) and Damaging the Environment (Art. 264). The Code does not explicitly mention the protection of air quality in the titles of these

Protection13, according to which environment represents a set of natural and man-made values whose complex mutual relations make up environment i.e. area and conditions for life and natural value is natural wealth that comprises air, water, soil, forests, geological resources, plants and animal life (Art. 3). Naturally, all of the offences that are directed against the environment in general at the same time represent attacks on its integral parts, including air and its quality. Criminal offence of Environmental Pollution exists if a person by violating the regulations on protection, preservation and improvement of the environment pollutes air, water or soil to larger extent or over a wider area. The punishment is imprisonment from 6 months up to 5 years and fine. If the offence is committed with negligence, the offender shall be punished by fine or imprisonment up to two years. On the other hand, if the offence results in destruction or damage to animal and plant life to large extent or environmental pollution in such extent that its revitalization requires a longer period of time or great expense, the offender shall be punished by imprisonment of one to eight years and fine. If the offence results in destruction or damage to animal and plant life to large extent or environmental pollution in such extent that revitalization requires longer period of time or great expense, the offender shall be punished by imprisonment of six months to five years and a fine (Art. 260). Criminal offence of Failure to undertake Environmental Protection Measures is committed by an official or responsible person who fails to undertake the stipulated environmental protection measures, or fails to proceed according to orders of competent authority in respect of environmental protection. For the basic form of this criminal offence, imprisonment up to three years or fine may be imposed. If the offence is committed with negligence, the offender may be punished by fine or imprisonment up to one year. However, if the offence resulted in environmental pollution, the offender shall be punished for the offence of Environmental Pollution (Art. 261). Illegal Construction and Operation of Facilities and Installations Polluting the Environment is a criminal offence committed by an official or responsible person who, contrary to regulations on environmental protection, preservation and improvement, allows construction, start-up and operation of facilities and installations or use of technologies that pollute the environment to larger extent and over a wider area. The punishment for this criminal offence is imprisonment of six months to five years. If the offence results in destruction of animal and plant life to high extent or pollution of the environment to such degree that revitalization would require a long period of time or great expense, the offender shall be punished by imprisonment of one to eight years (Art. 262). Damaging Environmental Protection Facilities and Installations exists if a person damages, destroys, removes or otherwise makes inoperable facilities or installations for environmental protection. Imprisonment up to three years may be imposed on the perpetrator of this criminal offence. If the perpetrator acted with negligence, he shall be punished by fine or imprisonment up to one year. If the consequence of the offence was air, water or soil pollution to larger extent or over a wider area, the offender shall be punished by imprisonment of six months to five years and if the pollution of air, water or soil to larger extent or over a wider area, the offender shall be punished by imprisonment up to three years. If the offence resulted in destruction or damage of animal and plant life to high extent or pollution of the environment to such degree that revitalization would require a long period of time or great expense, the offender shall be punished by imprisonment of one to eight years. If more serious forms of this offence result in destruction or damage of animal and plant life to high extent or pollution of the environment to such degree that revitalization would require a long period of time or great expense, the offender shall be punished by imprisonment of six months to five years (Art. 263). Criminal offence of Damaging the Environment is committed if a person causes damage to the environment to large extent or over a wider area by violating regulations, through use of natural resources, construction of buildings, executing works or in any other manner. The punishment

13 Law on Environmental Protection, Official Gazette of RS, No. 135/04, 36/09, 36/09, 72/09 and 43/11

prescribed is imprisonment up to three years. If the perpetrator acted with negligence, he shall be punished by fine or imprisonment up to one year (Art. 264).

The court may p -69) for each of the aforementioned criminal offences. In such cases, the court may to order the offender to undertake particular measures to correct the detrimental consequences to the environment within a set period of time. In its decision on suspended sentence, the court may also order that previously determined penalty shall be enforced if the convicted person fails to restore material benefit acquired by the commission of criminal offence, fails to compensate the damage he caused by the commission of criminal offence or fails to fulfill other obligations provided by the provisions of criminal legislation. The deadline for the fulfillment of these obligations is set by the court within the specified

CONCLUSION

Available data show that the quality of air in Serbia is constantly deteriorating. Such state causes justified and reasonable concern of both experts in the field of ecology, biology, agriculture,

consequences of over-pollution. Although our country adopted the Law on Air Protection, which enabled normative harmonization with the EU standards in this sphere of environmental protection, there are still some practical issues that need to be resolved in order to stop further pollution and, if possible, recover the quality of air in our country. According to Serbia Progress Report for 201214, published annually by the European Commission, certain but rather small progress has been made in the field of environment protection and climate changes. Complete harmonization of Serbian legislation with the Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment15 has been fully accomplished, but its practical implementation has to be improved, particularly in the sphere of quality of interaction with the public and dialogue with non-governmental organizations. The Law on the Ratification of the Protocol on Heavy Metals16 and the Law on the Ratification of the Protocol on Persistent organic Pollutants17 were adopted in 2012. Keeping up with the data on air quality in Serbia was additionally improved by the fact that National Laboratory for Calibration is in charge for keeping records on air quality, whereas analytical laboratory for air pollutants functions within the auspices of the Environmental Protection Agency (SEPA). However, the capacity and financial resources of SEPA are insufficient for proper performing of all activities pertinent to measurement and maintenance of air quality.

A slight progress has also been achieved in other fields that are directly or indirectly related to air quality, such as waste management, improvement of water quality, implementation of legislation pertinent to industrial pollution and risk and chemicals management as well as in the sphere of nature protection. However, insufficient administrative capacities and the lack of financial resources still represent serious obstacles in all of the aforementioned areas. Unfortunately, no progress has been detected in the field of climate change prevention, as one of the areas that has the most significant

14 Serbia Progress Report for 2012, European Commission, SEC (2012) 333, Brussels, 10.10.2012.

15 See: Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, Directive 2009/31/ of 23 April 2009 on the geological storage of carbon dioxide and amending Directive 85/337/EEC, Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 and Directive 2011/92/EU of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.

16 Protocol to the 1979 Convention on Long-Range Trans-boundary Air Pollution on Heavy Metals, Aarhus, 24 June 1998, United Nations, Treaty Series, vol. 2237, p. 4, Document of the Economic and Social Council EB.AIR/1998/1,

17 Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants, done at Aarhus (Denmark), 24 June, 1998, Document of the Economic and Social Council, ECE/EB.AIR/60.

impact on air protections. General policy on climate change prevention still needs to be improved and a comprehensive climate strategy must be developed. Namely, the issue of climate changes is an integral part of energetic policy, where only a small progress has been made regarding the field of renewable energy sources and energetic efficiency. Serbia still has not adopted the planned legislative framework on rational use of energy. It is necessary to make great efforts in order to integrate the issue of climate changed within sector policies and strategies. Serbia has not dedicated enough attention to its obligation to minimize its emissions until 2020 and limited progress has been made in the harmonization with the law of the EU regulating the issue of climate. All in all, limited progress has been achieved in harmonization of our legislation with legal heritage of the EU and great efforts need

area of climate. It is still necessary to raise consciousness an all levels on the importance of environment protection and climate changes and appropriate initiatives should be strengthened. The lack of administrative capacities and *ad hoc* international cooperation postpone the preparation and implementation of climate policy that is in accordance with the EU legislation. Administrative structure in charge for climate changes should be strengthened and support is needed in order to build capacities necessary as a response to requirements in this field.

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