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THE CLIMATE CHANGE – STRATEGIES AND LEGISLATION IN SERBIA

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Abstract: *Climate change is one of the most important subjects in 21st century. In fact, that is no longer just a question of environmental protection and ecological awareness, but along with it some other important themes are imposed: sustainability, economic growth, energy efficiency and energy security. Serbia is one of the countries of Southeastern Europe where climate change is evident, and its manifestations are more frequent and intense. As the consequences of climate change in Serbia in recent years the floods are more intense, landslides and erosion are more active, wind gusts are stronger, periods of drought are more frequent and longer and extreme climate events affect both urban as well as rural areas. In order to plan the sustainable development in areas vulnerable to climate change and, on the other hand, to reduce the effects of global warming and climate change in Serbia it is necessary to adopt and implement new strategies and laws, respecting the already adopted international conventions, declarations and strategies as well as national legislation.*

Key words: climate change, strategies, legislation, Serbia.

KLIMATSKIE PROMENE - STRATEGIJE I ZAKONSKA REGULATIVA U SRBIJI

Izvod: *Klimatske promene predstavljaju jednu od ključnih tema u XXI veku. U suštini, one više nisu samo pitanje zaštite životne sredine i ekološke svesti, već se uz njih*

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nameću i druge bitne teme: održivost, ekonomski rast, energetska efikasnost i energetska bezbednost. Srbija je jedna od zemalja Jugoistočne Evrope u kojoj su promene klime evidentne, a njihove manifestacije sve češće i intenzivnije. Kao posledica klimatskih promena, u Srbiji su poslednjih godina češće i intenzivnije poplave, aktivnija klizišta i erozije, snažniji udari vetra, češći i duži sušni periodi, a ekstremni klimatski događaji pogađaju kako urbana, tako i ruralna područja. U cilju planiranja održivog razvoja na područjima osetljivim na klimatske promene, a sa druge strane smanjenja efekata globalnog zagrevanja i klimatskih promena u Srbiji, neophodno je donošenje i primena novih strategija i zakona, poštujući usvojene međunarodne konvencije, deklaracije i strategije, kao i nacionalnu zakonsku regulativu.

Ključne reči: klimatske promene, strategije, zakonodavstvo, Srbija.

1. INTRODUCTION

Southeast Europe is among the world regions that are highly sensitive to climate change (IPCC, 2007; IPCC, 2009, UNECE, 2007; SEEFCCA, 2012). More frequent extreme climate events such as floods, droughts, strong wind gusts and very cold periods with large amounts of snow, are a good opportunity to test the vulnerability of areas in Serbia to climate change. According to Popovic, T. et al. (2009) estimates based on climate modeling in moderate scenarios indicate that the annual temperature in Serbia will rise 2.6° C by the end of the century. Warming will not be evenly distributed throughout the year: summers will be 3.5° C warmer than they are now as well as autumns 2.2° C, winters 3.2° C and the springs 2.5° C warmer than they are now. It is expected that the heat waves will be increased in frequency, intensity and duration, while the projections for the number of frosty and icy days say that they will continue to decline.

According to Brasanac-Bosanac, Lj., Cirkovic Mitrovic, T. (2013) trend of changes of mean annual air temperature and trend of changes of air temperature during growing season in Serbia (for period from 1949 to 2010) is positive in the most meteorological stations in Serbia (exceptions are Kursumlija and Crni vrh).

The greatest increases of linear trend values have the meteorological stations Rudnik, Loznica, Negotin, Palic, Pozega and Belgrade.

Adaptation to climate change primarily is based on government activities including the legislative framework, regulations and incentive measures for implementation of changes of socio-economic system in order to reduce the sensitivity to climate change (Burton et al., 2002).

In assessing vulnerability to climate change in Serbia there isn't any national strategy document that would define this issue. Some progress has been achieved by starting the process of Serbia's accession to the EU and harmonization of national legislation with EU legislation because the basic principles of the relevant EU legislation are actually based on the principles to fight climate change. However, many documents of the European Union in this area have not yet found a direct implementation in our legislation and strategies, and the Report of the European Commission from October 2014 concluded that in terms of the legislation in Serbia in Chapter 27 which refers to the environment and climate change, there has not been a sufficient progress (Serbia Progress Report, 2014).

2. METODOLOGY

In this paper has been used the analytical method with elements of generalization and inductive-deductive methods. International and national strategies, legislations and supporting documents relating to climate change, energy efficiency and renewable energy sources have been analyzed.

3. RESULTS AND DISCUSSION

International regulations

UN Framework Convention on Climate Change (UNFCCC) was adopted at the UN Conference on Environment and Development in 1992 in Rio de Janeiro, in order to ensure the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Convention entered into force in March 1994. The Republic of Serbia has been a member of the United Nations Framework Convention on Climate Change since 2001. One of the first national reports on climate change in Serbia is *Initial national communication of the Republic of Serbia under United Nations Framework Convention on Climate Change* (2010).

Kyoto Protocol – is an addition to international agreement on climate change. It entered into force in 2005. The Republic of Serbia ratified the Kyoto Protocol in 2007 and it entered into force in January 2008. The main difference between the Kyoto Protocol and the UNFCCC Convention is that the Convention encourages more economically developed countries to reduce emissions of greenhouse gases, while the Kyoto Protocol obliges them to do so. The Kyoto Protocol promotes and encourages researches, development and increased use of new and renewable energy sources, technologies to control emissions of carbon dioxide and environmentally sound technologies and that directly stimulates the energy efficiency. It defines the obligations of restriction and reduction of emission of six types of gases that cause the greenhouse effect, as well as the rate of emission reduction at the national level for each Member State of the Convention. Slovenia, Bulgaria and Croatia are in the group of countries that are obliged to reduce their emissions, while Former Yugoslav Republic of Macedonia, Bosnia and Herzegovina and Serbia are in the group of so-called Non-Annex I Parties, which have no obligations with respect to the reduction of emissions, but they can help reduce pollution by realization of projects in the Clean Development Mechanism (CDM).

The National Strategy on the inclusion of Republic of Serbia into Clean Development Mechanism of the Kyoto Protocol (2010) is aimed at identifying methods and possibilities for improvement of the environment in Serbia followed by economic and social development of the country. The general objective of the Strategy is to build capacities and to raise awareness about the possibilities of using CDM projects as methods to encourage sustainable development and to enable faster implementation of the *Kyoto Protocol* in the Republic of Serbia.

National legislation and strategies

National sustainable development strategy of Republic of Serbia (2008) defines a vision of the development of Serbia until 2017. As national priorities for achieving sustainable development in Serbia are identified protection and improvement of the environment and the rational use of natural resources so that they remain available for future generations. The strategy, among other things, distinguishes energy efficiency and renewable energy sources as priority areas. Within it, the climate change and protection of the ozone layer have been identified as the first of the seven major risk factors for the environment. Thermal power stations and heating sources, traffic and part of the housing stock that is heated in this manner have been identified as the main areas where CO₂ has been produced during the burning of fossil fuels.

Spatial Plan of the Republic of Serbia 2010 - 2020 (2010) is one of the first planning documents at the national level, which, among other things, details the climate change issues. This document promotes the climate change issue by establishing an obligation for its inclusion in the planning process. The SWOT analysis in section *Nature, environmental protection and development* identified the potential for reducing emission of greenhouse gases as one of the opportunities while lack of funds for implementation of the program of multidisciplinary studies of climate change effect on particular sectors of the economy, as well as the absence of standards on the implementation of climate data and information in planning and design were mentioned as disadvantages. As opportunities were identified: the identification of climate change as a factor for sustainable development of certain sectors of the economy and the identification of climate change as a factor for the overall economic development, the introduction of EU standards in the field of risk management of natural disasters, renewable energy sources, energy efficiency, design and construction of infrastructure systems that are relevant to various aspects of climate change while as the disadvantages were highlighted: the slowness of strengthening of institutional capacity and inadequate attitude towards the problem of climate change in the education and public information system. Problems have been identified, strategic priorities have been proposed as well as the basic and operative goals with the proposals for the implementation of the Plan, with particular emphasis on the effect of energy consumption on climate change and reduction of CO₂ emissions. The spatial aspects of certain energy sources and their potential in the entire national territory have been elaborated.

Implementation Program of the Spatial Plan of Republic of Serbia from 2010 to 2020 (2011) pointed to the strategic importance of forests and forest ecosystems as a natural resource and as an important link in the protection of the environment in Serbia, especially in terms of climate change.

Biodiversity Strategy of the Republic of Serbia for the period 2011- 2018 (2011) – Section 3: When it comes to the effect of climate change it is stated that there is no systematic monitoring of the effect of climate change on biodiversity in the Republic of Serbia. Current researches and planning are based primarily on global researches, experiences and recommendations of other countries.

The National Environmental Program (2011) – Within the chapter *Economic sectors and their impact on the environment*, it was pointed out that forests are an important ecological, economic and social potential of the Republic of Serbia, and having in mind that they perform the absorption of pollutants from the air or gasses responsible for the greenhouse effect, increasing forest coverage can provide a significant reduction in the concentration of these gases.

Law on Planning and Construction (2014) within the Chapter 3 of Spatial Planning and Land Use Principles points out that the planning, organization and use of space, among other things, are based on “...rational and sustainable use of non-renewable natural resources and optimal use of renewable energy resources (paragraph 4) and to promote energy efficiency by introducing the obligation that a “certificate on the energy performance of the building has to be issued ...” (Chapter 4 of *Improvement of energy efficiency*, Article 4).

In order to effectively fight against climate change *Forestry Development Program* (2011) stipulates that it is necessary to “timely detect significant changes in the functioning of forest ecosystems, define their characteristics and perform analysis of the consequences that arise due to climate change; disable and prevent actions that cause the weakening and destruction of forests” etc.

It should be underlined that, although the issue of climate change is present in national laws, planning documents, strategies and programs, the measures for reduction of effects and adaptation are not clearly defined or especially emphasized. It is surprising that many sectors that are highly sensitive to climate change in their strategic documents still do not recognize the need for better and more appropriate planning of implementation.

Harmonization of national legislation with EU legislation

Harmonization of laws is a joint obligation for accessing European Union. This means that countries aspiring to join the European Union should harmonize their national laws, regulations and procedures in a manner that will enable efficient transposition of entire EU legal structure. Since the obligations of harmonization of laws continues after entering EU, the harmonization process becomes a possibility for respective country to better organize its institutions and procedures and to train staff for daily processes and responsibilities of the enactment of legislation in accordance with EU models, as well as their implementation.

The European Union has developed a set of strategic and legal documents related to climate change. Especially important is the EU White Paper on adapting to climate change by which the EU has set a framework for solving the problems of adaptation at the community level and at the same time its members have a commitment to seriously and strategically approach to solving this problem (Pucar, M., 2013).

According to Pucar, M. (2013) the harmonization of national legislation with the European Union legislation in the field of climate change involves the transposition of EU Climate and Energy package. Among the most demanding directives of this package is the *Directive on emissions trading system* (EU Emissions Trading System - EU ETS). Efficient preparation and implementation of

this Directive require the preparation of both legislative and institutional framework. Analyzing the legislation of the European Union in the fight against climate change including the *EU climate and energy package* it is evident that the solution of this problem requires a series of coordinated and sustained actions. Thus the process of harmonization of the Republic of Serbia's legislation with EU legislation and implementation of the requirements certainly improve cooperation between all parties. The fulfillment of the basic requirements of the EU package primarily in terms of increasing the use of renewable energy sources and energy efficiency as well as inclusion in the emissions trading system can provide the placement of domestic products on the EU market.

By ratifying the *Treaty establishing the Energy Community* in 2006, Serbia made a commitment to implement European directive in the field of renewable energy sources and Directive on energy efficiency in the field of energy consumption. This Acts stipulate the harmonization of national laws of the signatory countries with the regulations and norms of the European Union in the fields of energy, competition, environmental protection and the use of renewable energy sources.

At the Sixth Ministerial Conference *Environment for Europe* (E4E) which was held in Belgrade in 2007, it was decided to strengthen the sub-regional cooperation in the field of climate change. The adopted Declaration has recognized the need to develop national plans - the so-called *Climate Change Framework Action Plans* (CCFAPs), but it has also emphasized the need for the establishment of sub-regional Virtual Climate Centre in Belgrade (Đukić, Stupar, 2011).

Draft Strategy for development of the energy sector of Republic of Serbia in the period until 2025 with projections to 2030 (2011-2013) should replace the existing Strategy which has not sufficiently cover the impact of power plants and energy production on the environment. Energy production with lower emissions of greenhouse gases will become a crucial criterion for evaluating energy technologies and possible directions of energy development whereby the norms related to the protection of the environment will constantly be intensified.

Key elements of the transition to sustainable energetics development of the Republic of Serbia are the implementation of energy efficiency measures, using of renewable energy sources and protecting the environment and reducing the impact on climate change (Pucar, M. Monography, climate change).

5. CONCLUSION

The issue of climate change is also present in the current legal and planning regulations in Serbia, but not sufficiently. As in most countries of Eastern Europe excuses for the failure to implement the policy for solving the problem of climate change in Serbia are sought in the absence of regulations and appropriate procedures, lack of institutional capacity and financial resources.

Harmonization with the EU in the field of climate change, renewable energy sources and energy efficiency is a long term process, which involves a joint commitment of all parties, both the state and business, academic and scientific community and international organizations. It is crucial that the Republic of Serbia

urgently engages in development programs of the EU because it takes many years for innovations in the field of climate change and energy to be applied in practice.

In order to adequately and timely respond to negative changes in climate in Serbia and to establish a successful cooperation with the countries of the European Union it is necessary to:

- harmonize national legislation with the ratified, international conventions, agreements and declarations and regulations of the European Union;
- intensify the use of energy from renewable energy sources;
- conduct monitoring and control of environmental quality and prevent adverse effects on the environment and humans;
- design adequate response of health sector to the consequences of global climate change;
- adapt the operations of business entities in the sectors of energetics, industry, transport, agriculture and forestry as well as municipal housing activities to policy of climate protection and fulfillment of international agreements;
- elaborate action plans for adaptation of mentioned sectors to climate change.

Serbia as a candidate for EU has to fulfill these obligations and it is certain that in the future has to be worked intensively on the issue of climate change, especially on adaptations to climate change.

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Summary

The issue of climate change in the international frameworks is not a one-way process. The partnership with the European Union implies the manifold exchange of information, coordination of decisions and policies, as well as participation in international forums, projects and researches. However, to initiate and stimulate initiatives to implement the program of adaptation to adverse effects of climate change, to establish energy efficiency programs and a system of use of renewable energy sources it is required the support of the state with the appropriate strategies, good tax policy, administrative and financial facilities, as well as the technical support. It is necessary to harmonize existing legislation with the European Union Directives which would significantly bring closer our country to the standards that prevail in European countries.

KLIMATSKE PROMENE - STRATEGIJE I ZAKONSKA REGULATIVA U SRBIJI

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Rezime

Pitanje klimatskih promena u međunarodnim okvirima nije jednosmeran proces. Partnerstvo sa Evropskom unijom podrazumeva mnogostruku razmenu informacija, koordinaciju odluka i politika, kao i učešće u međunarodnim forumima, projektima i istraživanjima. Međutim, za pokretanje i stimulisanje inicijativa za primenu programa adaptacije na negativne promene klime, programa uspostavljanja energetske efikasnosti i sistema korišćenja obnovljivih izvora energije, potrebna je podrška države sa odgovarajućim strategijama, dobrom poreskom politikom, administrativnim i finansijskim olakšicama, kao i tehničkom podrškom. Neophodna je harmonizacija postojećih zakona sa direktivama Evropske unije, što bi našu zemlju značajno približilo standardima koji vladaju u zemljama Evrope.