

A Review

Current Policies and Strategies Regarding Climate Change

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Abstract

Climate change is one of the greatest threats to the environment, the social and economic framework. Extreme climatic events, including heat waves, drought and flood periods, are expected to become more frequent and intense. In Europe, the highest temperature increases occur in southern Europe and in the Arctic. Precipitation decreases in southern Europe and grows in the north/northwest. It causes impacts on natural ecosystems, human health and water resources. Even if policies and efforts to reduce emissions are effective, some climate change is inevitable. Therefore, strategies and actions to adapt to the impacts of climate change in Europe and especially beyond its borders must be developed as less developed countries are among the most vulnerable with the least financial and technical capacity to adapt. Romania, as a member country of the European Union, must act both to combat the causes of climate change (by reducing emissions) and to mitigate the effects (through adaptation actions). The climate change adaptation component of the "National Climate Change Strategy 2013-2020" is intended to represent a general and practical approach to adaptation to the effects of climate change in Romania, providing directions and guidelines for different sectors to establish specific action plans. Will be updated periodically, taking into account the latest scientific conclusions on climate scenarios as well as sectorial needs.

Keywords: *climate change, policies, strategies, action plans, regulations.*

1. Introduction

Climate change is a global process facing humanity in this century from the point of view of environmental protection. The first action to combat the phenomenon took place in Rio de Janeiro in 1992 by signing the United Nations Framework Convention on Climate Change, ratified in our country by Law no. 24/1994, whereby the 194 signatory countries agreed to act in the long term in order to stabilize the concentration of greenhouse gases in the atmosphere at a level that would prevent the dangerous influence of humans on the climate system [3].

After five years, in Kyoto, Japan, and other developed countries have taken action to

combat climate change by making commitments to limit and reduce greenhouse gas emissions in 2008-2012, and have identified the means of international cooperation to achieve these goals. In 2009, following a broad consultation process with the Member States and with the factors involved, the European Commission published the "White Paper - Adapting to climate change: Towards a framework for action at European level", which outlines how to approach the promoting national adaptation policies and measures, so that at European level there is a minimum negative impact on the economic and social systems and an adequate degree of protection and conservation of natural resources [3, 4, 7 – 16].

2. Climatic changes, causes and effects

People are exerting an increasing influence on the climate and the temperature of the Earth, by burning fossil fuels, cutting down tropical forests and

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raising animals. These activities generate huge quantities of greenhouse gases, which are added to those already naturally present in the atmosphere, thus contributing to the greenhouse effect and global warming. Some gases in the Earth's atmosphere behave like the walls of a greenhouse - they capture and retain the heat of the sun, so that it is no longer released back into space. Many of these are naturally present in the atmosphere, but human activity has increased the concentration of some of them, in particular: carbon dioxide, methane, nitrous oxide, fluorinated gases [3, 4, 7 - 16].

Due to its increasingly visible effects over the last 3 decades, climate change has become one of the major themes of humanity, and the phrase "climate change" has broadened its scope considerably, coming out of the narrow circle of scientists and climatologists, and entering the discourses of politicians and even the everyday vocabulary. Climate change affects all regions of the world. The ice caps are melting, and the level of the seas and oceans is increasing [3, 4, 7 - 16].

According to the estimates presented in the National Inventory of Greenhouse Gas Emissions developed in 2012, the emissions of greenhouse gases increased in the transport field by about 155% compared to the emissions from 1989. Moreover, compared to 1989 the share the emissions related to this field from the total GHG emissions increased by about 3 times, representing 8.8% at the level of 2009 [3]. The increase of the emissions in the transport field is due to the increase of the mobility of the citizens in the period 1990 - 2008, the urban expansion, the transfer of the transport of passengers and freight mainly to the road transport, the intensification of the air traffic and the like [10, 11, 13]. It should be mentioned that Romania does not have a maritime fleet or research companies in the field; as a result, shipping is not considered in the Strategy [3].

The reduction of CO₂ emissions from transport must be achieved through an integrated, cost-effective approach that combines innovation in motor vehicle technology and the use of biofuels with the efforts of decision makers and consumers to adopt a new attitude towards the development of this economic sector [7 - 16].

In order to strike a balance between the need for mobility and the requirements of environmental protection, it is necessary to take into account the technical and financial possibilities, competitiveness and not least, the social impact [3, 4].

The implementation of the provisions of Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy efficient road transport vehicles plays a very important role in achieving the GHG

emission reductions. Regulation (EC) 443/2009 of the European Parliament and of the Council of 23 April 2009 establishing emission performance standards for new cars, as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles, targeting CO₂ from new cars, which sets a target of achieving an average of 2020 emissions of 95 g CO₂/km and Regulation (EU) 510/2011 of the European Parliament and of the Council of 11 May 2011 establishing a performance standards for new light commercial vehicles as part of the integrated Union reduction approach era of CO₂ emissions from light vehicles, targeting CO₂ emissions from new light vehicles, which sets a target of achieving an average emissions of 2020 of 147 g CO₂/km in 2020 [2, 5, 6].

An important component of reducing greenhouse gas emissions in the transport sector is the information and public awareness. The information and awareness programs will be addressed to the end user in order to facilitate the introduction of less polluting means of transport in this sector and to limit road transport. Awareness and information will also be realized at the level of industrial companies or industrial platforms in order to provide public transport modalities for employees [3, 4, 7 - 16].

3. Present policies and practices concerning the climatic changes

The European Union has constantly set the pace in combating climate change and encouraging the move to a low-carbon economy. Its efforts in this field date back to 1990, when the EU committed itself to stabilizing its CO₂ emissions to 1990 levels by 2000, a goal it has achieved. Since then, the Union has implemented a number of policy measures to reduce greenhouse gas emissions, many through the European Climate Change Program (ECPP), established in 2000. In addition, Member States have taken national measures. specific. EU leaders have set some of the most ambitious climate and energy targets for 2020, and the EU is the first region in the world to adopt binding legislation to ensure that the goals are met. More recently, in October 2014, representatives of European states reaffirmed their commitment to increasing the competitiveness, safety and sustainability of the EU economy and energy system, adopting the climate and energy policy framework for 2030. In the long term, the EU has set goals ambitious for 2050 [3, 4, 7 - 16].

The European Climate Change Program (ECPP) was launched by the European Commission in 2000 to help identify the most effective environmental policies and measures that can be taken at European level to reduce greenhouse gas

emissions. The immediate goal was to help ensure that the EU meets the Kyoto Protocol's emission reduction objective. Therefore, countries that were members of the EU before 2004 must reduce their combined greenhouse gas emissions by 8% below the level from 1990 to 2012. The ECCP is based on EU-wide emissions activities, for example in the field of renewable energy management and [3, 4, 7 - 16].

The European Commission has adopted a European adaptation strategy and wants all Member States to adopt, by 2017, national plans to deal with the inevitable effects of climate change. Some have already adopted adaptation strategies [3, 4, 7 - 16].

These include measures such as [3, 4, 7 - 16]:

- decrease in water consumption
- adaptation of regulations regarding construction
- construction of flood protection systems
- creation of crops to better cope with drought conditions

Keeping global warming below 2 ° C

Global warming should be limited to below 2 ° C compared to the average temperature of the pre-industrial period in order to avoid the occurrence of extremely serious consequences and possible catastrophic changes, worldwide, of the environment. Almost all countries in the world acceded to this objective in 1992, on the occasion of the United Nations Framework Convention on Climate Change [3, 4, 7 - 16].

To this end, humanity must stop the growth of greenhouse gas emissions by 2020 and reduce them by 60% by 2050 compared to the 2010 level.

The latest scientific evidence suggests that if measures are not taken to reduce global emissions or if these measures are insufficient, by the end of the century, global warming could exceed the 2 ° C threshold and even reach 5 ° C [3, 4, 7-16].

4. The frame concerning climate and energy for 2030

Within the European Council of 23-24 October 2014, the 2030 Framework on energy and climate change policies was agreed, which aims [1, 3, 4, 7 - 16]:

- target for EU-wide reduction of greenhouse gas emissions by 40% compared to 1990 level. This target will involve a 43% reduction in emissions from industrial sectors covered by ETS (eg energy production, oil and gas). - chemistry, iron and steel, cement production, etc.) and, respectively, with 30% for the sectors outside the scheme (eg transport, agriculture, energy efficiency of buildings, waste management), compared to 2005. Target on reducing gas emissions with greenhouse effect (GHG) will contribute to the achievement of the other targets in

the field of renewable energy (RES) and energy efficiency (EE).

- a minimum mandatory level at EU level of 27% for the share of energy from renewable sources in the total energy consumption, to be achieved through appropriate commitments / contributions of the Member States.

- indicative target for energy efficiency improvement of at least 27% at EU level which will be revised by 2020 in the event of a 30% increase in 2030.

The new package on the 2030 Framework in the field of energy-climate change launched by the European Commission in January 2014 is a continuation of the 2020 package, based on the experience gained from its provisions. The 2030 framework is also in line with the long-term perspective of the 2050 EU policy, in line with the vision presented by the Commission in the "Roadmap on the transition to 2050 towards a low carbon economy", "the Roadmap on energy in the horizon 2050" and the White Paper in the field of transport [1, 3, 4, 7 - 16].

All of these documents reflect the EU's goal of reducing GHG emissions by 80-95% by 2050 as part of the commitment to reduce cumulative emissions of developed countries by at least 80-95% by 2050 [1, 3, 4, 7 - 16].

In order to transpose the decision of the Heads of State and Government of the October 2014 European Council on the future Framework 2030 in July 2015, the European Commission (COM) launched the legislative proposal regarding the revision of Directive 87/2003/EC on the EU certificate trading scheme. of greenhouse gas emissions. At the same time, in July 2016, in order to complete the measures that ensure the implementation of the October 2014 Heads of State and Government decision on the 2030 Framework, COM launched the initiatives that make up the Non-ETS Package [1, 3, 4, 7 - 16].

The issue of climate change remains on the agenda of the European Union's priorities, the subject being the attention of the heads of states and governments at the March 2016 European Council meeting. The conclusions of the March 2016 European Council underline the need for ratification of the agreement by the EU and its Member States. as soon as possible [1, 3, 4, 7 - 16].

5. Conclusions

For international decision makers, global warming raises two major concerns: the need to significantly reduce greenhouse gas emissions, in order to reduce the anthropogenic influence on the natural climate system and the need to promote

policies and measures to adapt to the foreseeable effects of climate change, mainly due to the inertia of the climate system.

At 2030, a 20% reduction in GHG emissions is expected compared to the 2008 level and 60% in 2050 compared to the 1990 emissions level, according to the 2050 Transport White Paper - Roadmap for a space Single European Transport System - Towards a competitive and resource efficient transport system, developed by the European Commission.

The national strategy on climate change 2013-2020, addresses in two distinct parts: the process of reducing greenhouse gas emissions in order to achieve the assumed national objectives, and adapting to the effects of climate change, taking into account the European Union policy in the field of change. climate and the relevant documents elaborated at European level and mentioned above, as well as the experience and knowledge gained in collaboration actions with partners from abroad and international prestigious institutions.

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