Policies For Limiting Climate Change And Directions For The Electricity Sector

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Abstract: - The success in achieving the Europe 2020 national objectives depends on the implementation at national level of structural reforms needed to accelerate a growth that is smart, sustainable and favourable to inclusion. The national reform programmes (PNR) represent an obligation for each Member State to "translate" at national level the Europe 2020 objectives. In the Romanian National Reform Programme were established, among other priorities, the improvement of the quality of life through sustainable management of renewable resources and mitigation of climate change effects, increasing the energy efficiency, the management of natural resources and pollution reduction.
In this paper there will be analyzed the general objectives of the climate change limitation and combating, the strategies to reduce climate change, implemented at the global, european and national level, and also directions for development of the electricity sector. In terms of global strategies, the main measures adopted by the United Nations Framework Convention on Climate Change, and through the major Conferences of Parties will be analyzed. At the European level, will be examined the Community objectives relating to the reduction of greenhouse gases emissions and the adopted measures to meet the proposed targets, and at the national level there will be evaluated the measures through which Romania implements the policies set at the global and community level. Regarding the directions of development of the energy sector at the European level there will be exposed and analyzed the measures imposed by the European Commission and the Member States, and at the national level, the main directions for action of the energy sector in Romania.

Key-Words: - energy, policies, climate change, mitigation

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1. Introduction

Climate change is a long term complex process of change of the climate elements (temperature, precipitation, increased frequency and intensity of extreme weather phenomena, etc.), mainly attributed to the increase of greenhouse gases emissions (GHG) generated by human activities that have led to imbalances in the atmosphere and favored triggering the greenhouse effect.

The energy sector has a major contribution in the generation of greenhouse gases (GHG) emissions, mainly through the combustion of fossil fuels. The reduction of polluting emissions resulting from the combustion of fuels represents an important mean of protecting the environment and improving the health status of the population, these two elements representing the major trends within the sustainable development strategy of the society.

On the other hand, fossil fuels are a limited resource, costly and often located away from the place of use. At present, worldwide, the production of energy from alternative or renewable sources is gaining momentum. Whereas the conventional processes of generating energy from fossil fuels are well developed, the short-term trend is to promote efficiency and the rational use of energy, with the later evolving towards capturing and storing carbon dioxide in order to reduce emissions of greenhouse gases. The long-term trend is to replace non-renewable resource consumption with alternative technologies based on the use of renewable

resources and minimise the emissions of pollutants. The use of alternative technologies is limited by current technology, level of economic efficiency and environmental constraints.

Climate change can have a considerable impact on economic growth and development. To act in order to limit the climate change phenomenon and/or to limit its effects should be a priority for every country in the world, and the action methods should not hinder the economic growth of rich or poor countries. Being a global phenomenon, climate change requires a global response based on a common understanding of the long-term objectives and of the agreements ratified worldwide.

2. Policies to combat the climate change

2.1. General objectives of limiting and combating climate change

As noted above, climate change is a complex long-term proocess of changing climate elements, mainly attributed to the increase in GHG antropogenic emissions that has led to imbalances in the atmosphere and favored triggering the greenhouse effect.

Many human activities, but especially burning of fossil fuels and destroying forests to create farmland, can cause rising levels of carbon dioxide and other gases that retain heat in the atmosphere. The accumulation of these gases with warming potential intensifies the natural greenhouse effect. That leads to increasing temperature on Earth and to the appearance of climate changes.

The objectives of the global strategies in this area concern firstly the creation of the framework which leads to ***reducing the phenomenon of climate change*** and secondly the ***adaptation to the impacts caused*** by climate changes.

Reducing the phenomenon of climate change. There are several ways to reduce the climate change phenomenon that mainly aimed at reducing GHG emissions, and the stimulation of the sinks.

a. reducing greenhouse gases emissions. The proposed measures for reducing greenhouse gases emissions, are among the most diverse. These measures are related to reducing the consumption of fossil fuels for energy production, promotion of renewable energy sources, development and promotion of technologies with low or zero emissions, increasing the proportion of fuels obtained from renewable raw materials, limiting/prohibiting the use of nitrogenous fertilizers and replace them with manure, coupled with the manner by which the application is made on the field, reducing emissions from landfill waste, carbon capture and storage, as well as increasing the energy efficiency.

b. increasing quantities of carbon dioxide removed by siks, by limiting deforestation and afforestation. The United Nations Convention on Climate Change (UNFCCC) acknowledges the need to protect forests as part of efforts to combat climate change. The forests need to be populated with species of trees that are less vulnerable. The tree species resistant to climate change need to resist to new types of pests also. In addition, Directive 2003/87/EC, as amended, indicates that some of the amounts obtained as a result of the auction of quotas will be used for measures to avoid deforestation and increase forestation in developing countries. [1]

Adequate adaptation to climate change. Adaptation represents an action through which the society learns to respond to the danger caused by climate change. This danger is real, and can affect many essential sectors of human existence.

Adaptation requires action at all levels: local, regional, national and international, as well as in all sectors of activity. At european level, the policy of adapting to the effects of climate change was launched in June 2007 with the initiative developed by the European Commission through the Green Paper followed by the White Paper in 2009 (adaptation to climate change: Towards an European framework for action). [2]

Among the measures to facilitate adaptation to climate change are the following: the transfer of clean technology, appropriate water management, mitigation of effects caused by extreme weather conditions, adapting agriculture to climate change, adaptation and changing the population mentality, estimating the cost of climate change for each sector of activity.

2.2. Global level policies

The United Nations Framework on Climate Change (UNFCCC), adopted in 1992 at the Earth Summit in Rio de Janeiro and entered into force in 1994, lays down the general framework for intergovernmental action in response to the challenge posed by climate change. On this occasion it was confirmed that the climate system is a shared resource of mankind whose balance can be affected by anthropogenic emissions of carbon dioxide and other greenhouse gases. This Conference was followed by the Conference of Parties (COP), the most important of these conferences being displayed below.

The third annual Conference of the parties to the framework Convention adopted ***the Kyoto Protocol (KP),*** which defines the targets for greenhouse gases (GHG) emission levels to each of the parties. The Protocol provided an implementation process, in the form of a comprehensive strategy for limiting and reducing greenhouse gases emissions, through the setting of specific targets and flexible mechanisms.

The fourth annual Conference of the Parties to the framework Convention was held in November 1998 in Argentina, at Buenos Aires and had as purposeful the ***Buenos Aires "Action Plan"***, the plan which addresses the following strands:

- The financial mechanism - Global Environmental Fund (GEF) has been designated as the entity responsible for the operation of the financial mechanism of the Convention in the field of financing;
- The development and transfer of technologies;
- Addressing the needs of the developing states, including the minimization of negative the impact;

The seventh Conference of Parties, which took place in 2001, in Marrakech in Morocco has completed most of the details of the ***Buenos Aires Agreements.***

The Conference of Parties in Bali (COP 13), which took place in December 2007, adopted a roadmap, ***"Bali Road Map",*** which includes the Bali Action Plan. This plan initiates a comprehensive process to enable the implementation of the Convention on a long-term basis.

With the approaching of the end of the commitment period established by the Kyoto Protocol, at the ***Copenhagen Summit*** in December 2009, the issue of a post-2012 agreement to combat climate change was raised.

The international community has decided to tackle the challenge of climate change over the long term, collectively and comprehensively over time and take concrete steps to accelerate a global response. The 16th Conference of the Parties, which was held in Cancun, Mexico, in 2010, has adopted significant agreements in this regard. ***The Cancun Agreements*** represent significant steps in the implementation of plans to reduce greenhouse gases emissions.

The 18th Conference of Parties to the Convention took place in November 2012, in Doha, in Qatar. During the Conference it was agreed, as requested by the European Union, on a work plan for the year 2013 and after, under ***the Durban Platform***. The platform has a dual mandate: to draw up a new global agreement on climate change, with the participation of all countries, to be adopted in 2015, and to identify ways to achieve ambitious reductions in global emissions by 2020, in order to reduce the gap between current emission commitments and measures to limit global warming to less than 2°C. [3]

At the last ***Conference of Parties (COP-19)***, which was held in Warsaw in November 2013, Governments have taken important decisions to ensure adoption of a common agreement regarding climate change in 2015. The objectives of this agreement are the following:

- Involvement of all Parties in the global effort to reduce emissions rapidly, in an amount sufficient to decrease the risk of climate change, at the same time improving the capacity to adapt to this phenomenon;
- Stimulating rapid action for combating climate change.

In this line, Governments have agreed to report their contributions before the ***Paris Conference in 2015***. Moreover, the instruments on monitoring, reporting and verifying of internal actions were completed and are to be implemented, thus providing a solid base for the agreement in 2015.

2.3 Policies at the European Union level

For the European Union, combating the phenomenon of climate change is an essential element for economic and social development, which is reflected both in the actions carried out in the past few years domestically and internationally, as well as in its policy on climate change. Within the EU, legal acts were adopted that demonstrate the importance that the Union attaches to limit climate change.

European Union objectives concerning the greenhouse gases (GHG) emissions. The 15 countries that were Member States when the Kyoto Protocol was signed (1997), have undertaken a reduction of emissions in the first commitment period of the Protocol (2008-2012), with 8% compared to the reference year (1990 in most cases). In 2011, the last year for which data are available, the EU-15 emissions were 14.9% lower compared to the reference year. According to the EEA for 2012, EU-15 emissions were on average 12.2% below base year levels during the period 2008-2012.

The 13 countries which have acceded to the EU after the signing of the Kyoto Protocol, with the exception of Cyprus and Malta, had set a clear objective regarding the limitation of GHG emissions in the first commitment period of the Protocol. Hungary and Poland have set as their objective the reduction by 6% of the GHG emissions in the period 2008-2012, and Croatia aims at a reduction of 5% compared to 1990 level. The other eight Member States objective is to reduce emissions by 8% compared to the reference year. Based on the current estimates is that all of the 11 Member States which have set targets under the Kyoto Protocol will meet or even exceed their objectives.

For 2020, the European Union has set itself the objective of unilaterally reducing by 20% the GHG emissions of the 28 Member States, compared to the year 1990. The EU has offered to raise this goal to 30 percent if other major economies of the world would agree to contribute a fair share to the effort to reduce global emissions. The Commission has published a communication in which it considered this possibility. At the same time, the commitment to reduce 20% is provided for within the "energy-climate change" package and is an important objective of the EU 2020 Strategy.

The EU also pledged to reduce its emissions by 20% in the second Kyoto period (2013-2020). This commitment differs in some respects compared to the unilateral commitment of EU 2020.

One of the most important mechanisms of reducing emissions in the European Union is represented by the ***Emissions Trading Scheme (EU-ETS).*** This is an important part of EU policy for combating climate change, and also a key element for effective reduction, in terms of cost, emissions of greenhouse gases coming from industry sector. EU-ETS, the first and most important GHG emissions trading system, covers more than 11,000 industrial centres in 31 countries.

Reducing emissions at the national level. Decision No. 406/2009/EC of the European Parliament and of the Council regarding the effort of Member States to reduce their GHG emissions to meet the Community's reduction commitments up to 2020, sets the minimum level of commitment of the Member States in terms of GHG emissions as a result of Community engagement for the period 2013-2020.

Reducing emissions from transport. Transport is responsible for one fourth of the GHG emissions in the EU, being the second emission generator, after the energy sector. Road transport contributes with one fifth of the total emissions of carbon dioxide, the most prevalent greenhouse gas. While emissions from other sectors fall, those generated by the transport sector have increased by 36% since 1990. A series of policies are necessary to reduce these emissions, and those policies must be tailored to each type of transport.

Reducing emissions through forests and agriculture. The emissions and sequestration due to forestry and agriculture in the non-industrialized countries are not currently regulated by an international legal framework. The policies development on forests in non-industrialized countries are covered by a framework entitled REDD + (Reducing Emissions from Deforestation and Forest Degradation "plus" conservation, the sustainable management of forests and enhancement of forest carbon stocks), the Joint United Nations programme for reducing emissions from deforestation and forest degradation.

In most industrialized countries, greenhouse gases emissions are generated from energy production and other anthropogenic sources. In the EU, agriculture and forests contributes to the atmospheric carbon reduction by eliminating approximately 9% of the total emissions from other sectors of activity.

Fluorinated gases with greenhouse effect. The European Union has integrated the control of fluorinated gases in the framework of its policy of combating climate change. The legislation was passed in 2006, and in 2012 the Commission has submitted a proposal to improve this legislation in such a way that emissions of these gases to be reduced by two-thirds by 2030.

In December 2013, the representatives of the European Parliament and the Council had agreed on a slightly modified text, based on the Commission's proposal. The revision of the fluorinated gas legislation is currently the subject to formal approval of the Parliament and of the Council.

The protection of the ozone layer. The European Union has a strong involvement in the protection of the ozone layer and has implemented an extremely strict legislation in this regard. The EU has not only implemented the Montreal Protocol on protecting the ozone layer, but has often eliminated dangerous substances more rapidly than was necessary to do so.

Substances that deplete the ozone layer are among the constituents of large range of industrial and consumer products. These substances have been used mainly in refrigerators, air conditioners and fire extinguishers.

Financing activity to combat climate change. At the Conferences of Parties to the United Nations Convention on Climate Change in Copenhagen (2009) and Cancun (2010), the EU and other developed countries have decided to offer nearly 30 Bil. $ in the 2010-2012 period to the developing countries, in order to support immediate action. At the same time, EU has undertaken to mobilize 100 Bil. $ until 2020. The EU considers that both public funds and private ones are indispensable elements for the financing of programmes to tackle climate changes and should be secured by further efforts to mobilize alternative sources of funding and private contributors.

Targets for 2030 on energy and climate have been proposed on 22 January 2014 by the Commission, and have to be achieved by 2030, if the European Union wishes to respect its commitment to reduce GHG emissions by 80-95 percent by 2050. The targets send a powerful signal to the market, encouraging private investments in new electricity networks, or technologies with low carbon emissions.

The objectives are the following: a 40% reduction of GHG emissions (compared with 1990 levels); a share of 27% in consumption to come from renewable energy sources; and the role of energy efficiency to be an important one, without being given a specific goal.

Adaptation to climate change phenomena. The Commission has adopted the Adaptation Strategy of the European Union in April 2013. By complementing the activity of the Member States, the strategy supports actions to promote better coordination and exchange of information between Member States, and at the same time, by ensuring that the adaptation is included in all the major policies of the European Union.

2.4 National level policies

Romania has always given particular importance to preventing and combating climate change. As an EU Member State, Romania participates in the community efforts to limit climate change through the transposition of Community legislation into the national law. The Romanian Government has contributed to the entrance into force of the framework Convention of the United Nations on Climate Change, signed in Rio de Janeiro on 5 June 1992, through its ratification in 1994 by Law No. 24 of 6 May 1994. At the same time, our country was the first country that ratified the 1997 Kyoto Protocol of UNFCCC, by Law No. 3 of February 2, 2001.

Romania's National Strategy on Climate Change 2013-2020, was approved by the Government in July 24, 2013. The strategy analyses the reduction of GHG emissions, in order to achieve the national targets, and adaptation to the impact of climate change. Implementation of the proposed strategy is Government responsibility, under the coordination of the Ministry of the Environment and Climate Change.

In the developping of the National Action Plan on Climate Change will be included the elements related to the implementation of the three Rio Conventions.

The first part of the strategy, related to the reduction of greenhouse GHG and to increasing the capacity of absorption of atmospheric carbon dioxide, has been focused on the following sectors: energy; industrial processes; solvents and usage of other products; agriculture; land use, forestry, waste management. [4]

The second part of the strategy is related to the problem of adaptation to the impact of climate change. The strategy aims to create a framework of action to enable each sector to draw up its own action plan.

The National Action Plan on Climate Change is the central instrument of National Strategy and determines the method for reporting progress on implementation. The Plan indicates the obligations of each of the institutions involved and identifies the key actors for each task. It specifies time limits for the various

actions and also identifies sources of funding for the proposed action. The National Action Plan for Romania's National Strategy on Climate Change for 2013-2020 has not been elaborated, yet.

The national system for assesment of GHG anthropogenic emissions from sources and sinks, regulated by the Kyoto Protocol (SNEEGHG), establishes all aspects of institutional and procedural nature related with the estimation of GHG anthropogenic emissions under the Kyoto Protocol, and also procedures for reporting, archiving and storing of the information contained in the GHG National Inventory.

SNEEGHG is designed and administered by the competent authority so as to ensure the transparency, consistency, comparability, completeness and accuracy of the inventory, as defined in the IPCC Guidelines for the preparation of national GHG inventories, revised in 2006.

The National Inventory of Greenhouse Gases Emissions (INEGES) is an instrument for calculating and reporting GHG emissions and the level of sequestration of the CO_2, under the UNFCCC and represents the support of the national system for the estimation of GHG emission levels and the levels of CO_2 removed by sinks.

The Inventory is prepared by the Climate Change Department of the National Agency for Environmental Protection and is sent annually to the UNFCCC Secretariat, to the European Commission and to the European Environment Agency. Each Inventory characterizes the base year period (1989) - year X-2, X being the year in which the reporting is taking place. [5]

The Guide on adaptation to climate change impacts. The objective of this "Guide" is related to the development of the capacity of our country to adapt to the actual and potential consequences of climate change, through the following elements: monitoring the effects caused by climate change, and of the related economic and social vulnerability; the inclusion of adaptation measures to the consequences of climate change in the development of the strategies and sectoral policies and their cross-sectoral harmonization; identification of adaptation measures for the sectors which are vulnerable to the phenomenon of climate change. [6]

3. Development directions of the sector of power generation

3.1. Directions of development at European Union level

By burning fossil fuels, the energy sector has a major contribution to the generation of greenhouse gases emissions - mainly carbon dioxide (CO_2).

Reduction of polluting emissions resulting from the fuels combustion represents an important mean of protecting the environment and of improving the health status of the population - major requirements under the sustainable development strategy of the society – being known the association of the greenhouse effect with climate change. In this context, the European Union puts great emphasis on the implementation of environmental protection energy policies.

Valorisation of energy from renewable energy sources. On March 27, 2013, the European Commission published the first progress report on the Renewable Energy, under the provisions of the Framework Directive on Renewable Energy in 2009. From the adoption of this directive and the introduction of the objectives related to renewable energy, most Member States have experienced a significant increase in this type of energy consumption. The statistics from 2011 indicate that the EU is on the right track (13%) in terms of the targets for 2020 related to the 20% share of energy from renewable sources.

In accordance with the requirements of the 2009 Directive on Renewable Energy, every two years the Commission shall publish a progress report. The report assesses the progress of Member States in the promotion and use of renewable energy, taking into account the targets for 2020. The report also describes the development of policies in relation to energy from renewable sources in each Member State and their compliance with the measures laid down in the directive and in the national plans on renewable energy.

Increasing energy efficiency. The new directive on energy efficiency came into force on December 4th 2012. Most of its provisions were to be implemented by Member States up to June 5th 2014. This directive establishes a common framework of action for the promotion of energy efficiency in the European Union, in order to ensure the fulfillment of the objective of the Union for 2020, namely 20% increase in energy efficiency.

The new measures include:

- Quantifiable definition of EU target on energy efficiency: "The EU consumption in 2020 will not be higher than 1483 Mtoe - primary energy or not higher than 1086 Mtoe – final energy".
- The obligation of each Member State to establish an objective relating energy efficiency, in the form that it prefers (e.g. primary/final savings, intensity, consumption) and the obligation to communicate this objective, together with its "translation"in terms of the absolute level of primary energy consumption and final energy consumption in 2020.
- Obligation of Member States to achieve a certain amount of energy savings during the 2014-2020 period, by using energy efficiency schemes and other measures to increase efficiency in households, industry, transport;
- The public sector should be an example through the thermic isolation of 3% of the buildings owned and occupied by central institutions, and at the same time, through the inclusion of energy efficiency criterias in public procurement law, and through the acquisition of buildings, products and services efficient from the energetic point of view.

Safe use of nuclear energy The Commission proposed in June 2013 the amendment of the Directive from 2009 on nuclear safety, by: a. introducing new safety objectives at EU level; b. establishment of an european system of peer evaluations of nuclear installations; c. establishment of a mechanism for the development of guidelines on nuclear safety; d. strengthening the role and independence of national legislators; e. increasing the transparency of the nuclear safety problems.

European Energy Programme for Recovery In order to remedy the effects of the financial and energy crisis which affected the European economy in 2008, specific measures had to be adopted. In this respect, the European Energy Programme for Recovery provides for the granting of financial assistance to the energy sector, in particular for the introduction of interconnection infrastructure, renewable energy production, carbon capture and promotion of energy efficiency.

The European Energy Programme for Recovery was introduced for the purpose of financing projects in three main areas of the energy sector:

- Gas and electricity infrastructures;
- Wind energy;
- Carbon capture and storage.

A financial package of 3980 million EURO is dedicated to those three programs and to the financial instrument, these being allocated as follows: a. projects regarding gas and electricity infrastructures - 2267 million EUR; b. wind energy projects - 565 million EUR; c. projects for capturing and storing carbon dioxide - 1000 million EUR; d. financial instrument - 146 million EUR.

Other components of the energy policy of the European Union

The Energy Roadmap 2050 In 2011, the European Union has assumed, by adopting Energy Roadmap 2050, to reduce emissions by 80-95 percent below 1990 levels, by 2050. In the roadmap, the Commission examines the challenges stemming from the “decarbonisation” objective of the European Union, under the conditions of ensuring the energy supply and competitiveness. The roadmap is the basis for the long-term development of an European framework together with all interested parties.

The European Energy Strategy 2020 The communication "Energy 2020 - A strategy for a competitive, sustainable and safe energy" requires the adoption of measures in areas where new challenges may arise. These areas are:

- Energy efficiency;
- Infrastructure;
- Energy technology;
- External dimension of the internal energy market.

A single market for gas and electricity On October 10th 2011, the EU has adopted strict new rules regarding the wholesale energy trading. The main objective is to prevent the use of inside information and other forms of market abuse, which distorts the prices of wholesale energy and represents the reason that businesses and consumers pay more for energy than would be necessary. The new legislation will come into force by the end of 2014. Energy trading will be regulated for the first time at EU level, in order to uncover abuses. The national authorities of the Member States may apply sanctions to help stop and prevent market manipulation.

Energy infrastructure The European Union aims to complete by 2020 the energy strategic networks and the storage systems. This objective reffers to the production, transport and storage of energy. Modern energy infrastructure is crucial for an integrated energy market and to meet the EU objectives on climate and energy. The energy network must be modernized and expanded throughout EU, to take over energy from renewable sources and to provide safe, reliable supply everywhere. It is also need for intelligent networks, to save energy and to better manage the distribution. The Commission has identified 12 priority areas for the corridors and networks for electricity, gas, oil and carbon dioxide, and promotes projects to implement them.

3.2 Development directions at the national level

The priority objectives for the development of the Romanian energy sector Economic and social development on the long term requires a balanced energy policy that would take into account the following objectives, established by the Romania's Energy Strategy for the period 2007-2020, updated for the period 2011-2020: [7]

- the economic stability and the security of supply under the conditions of uncertainty in the price of energy resources on the international market, due to the continuous increase in energy demand;
- environmental protection - through the introduction of new technologies for the production and consumption of energy with low environmental impact, and for reducing climate change;
- the proper functioning of the internal market of electricity and natural gas, guarantee for a transparent, non-discriminatory competition and integration in the regional and European market;
- development and production of new technologies for the production and the consumption of electricity and environmental protection; the energy sector will sustain economic development and the creation of new jobs.

The Romania's Energy Department's intention is to complete the new ***Energy Strategy for the period 2014-2035***, at the end of 2014. The first set of principles which will form the basis of the new National Energy Strategy, are the following:

- Strategic for Romania is to keep a balanced energy mix, which is a good premise for ensuring the energy security of the country.
- There are real prospects for Romania to further reduce its energy dependence or even become energy independent by 2020, especially due to the deposits in the Black Sea, even though it will most likely continue to be dependent to some extent on oil imports.
- In the period 2014-2024, Romania should encourage a prudent development of renewable energies, especially biomass, given that investing in photovoltaic and wind have developed too quickly and in an unsustainable manner in recent years. In the next few years, installing new production capacity of electrical energy in photovoltaic and wind could cause significant problems in the functioning of the system. Identification of alternatives to classical fuels used in the transport sector is also considered aa a priority in the field of renewable sources.
- The development of nuclear energy is essential for the achievement of the European Community objectives, which are aimed at reducing greenhouse gases emissions.
- Coal could remain an important source for ensuring the energy security of Romania, even if its share in the energy mix will diminish, being affected by the increasing of the energy consumption.
- Romania has a great potential in terms of energy efficiency, a potential that needs to be harnessed effectively, including in the field of buildings.
- Energy market in Romania could be integrated around the years 2019-2020 in the EU market, in the condition in which the project of creating a common European energy policy will be accelerated.
- The implementation of corporate governance rules at State companies should be speeded up and, at the same time, should be complemented by an analysis of the possibilities to strengthen the Romanian energy industry in a manner which is economically viable and which takes account of the strategic orientations of the region over the medium and long term.
- Romania should encourage the investors in the energy field in keeping interest in the domestic energy industry, providing a stable and predictable framework.

From the analysis of legal provisions of the "energy-climate change" package and the funding of the support mechanisms at Community level, in conjunction with the development of the Romanian economy,

which will be based on the energy produced from fossil fuels (lignite), for Romania is essential the construction of new installations of power generation with CCS technology, as a measure to achieve the targets of reducing GHG emissions.

Also, the development of energy sectors must lead to compliance with the percentage of air pollutants emissions reduction by 2020 and beyond, set for Romania, by adopting on may 4th 2012 the reviewed Gothenburg Protocol.

For Romania, the level of emissions reduction by 2020 (expressed in % of emission reduction for the 2005-2020 period) is: 77% for SO_2, 45% for NOx, and 28% for particulate matters (expressed as PM 2.5) and will constituate an emissions reduction commitment, through the ratification by Romania, as an EU Member State, of the reviewed Gothenburg Protocol.

4. Conclusion

Policies to combat and limit the climate change are among the most diverse, these being determined mainly by the framework Convention of United Nations on Climate Change, their implementation being in charge of Parties to the Convention. Romania, as an EU Member State, and Part of the UNFCCC harmonizes its policies to tackle climate change with those of the Union, putting emphasis on increasing the energy efficiency, promoting renewable energy sources and developing the technologies for carbon capture and storage.

Considering the negative impact of the energy sector on the environment, the directions of development for this sector should be geared in favour of reducing the phenomenon of climate change, through the involvement of all decision-makers and through compliance with the legislation in force.

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