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Abstract: Conservation and development of forests have become necessary in view of the role and functions of the forest, both as hardly renewable natural resource and as a means of maintaining the ecological balance or the environment to genetic resources and forestry ecofund.

It is well known that forest vegetation, through its peculiarities, favorably influences human life, especially through climatic conditions, state of the atmosphere, soil erosion, hydrologic regime to ensure a normal development of flora and fauna in the areas covered.

However, the majority of us adopted a superficial lifestyle, minimizing the role of the environment for our lives and we became the victims of our own actions and abuse on the nature. The technological inventions and even the appliances destroy the nature. In addition, we need to mention illegal logging and deforestation.

Given the necessity to reduce the emissions of the greenhouse gases, the countries around the world tried to find a solution. In this respect, European Union decided that a first step would be the improvement of efficiency energy, which apply throughout the chain: primary resources, manufacturing, distribution, supply, transportation and final consumption.

In this paper we want to present the EU Directive with respect to this problem, by showing the way in which Romania adopted it and the results recorded by our country. Is it useful?

1. INTRODUCTION

The greenhouse effect is a formula that designates ongoing process of growing global atmospheric temperature or global warming. The phrase originated in the similarities that can be made between a greenhouse covered with glass or plastic and the accumulation in the atmosphere of gases that have virtually the same effect.

Interest in greenhouse gas emissions is justified by the result of their harmful environmental impact and contribution of each gas on global warming. We must be aware that in the composition of Earth's atmosphere is found less than 1% of greenhouse gas emissions, and each has a different capacity to absorb heat, but also on the stationing them in the atmosphere - global warming potential.

Scientists know that certain gases heat draw and make it act like a blanket to warm the planet. One of the most important is carbon dioxide (CO₂) that is released into the atmosphere when burning fossil fuels - oil, coal and natural gas - to generate electricity, power for vehicles and for domestic heating.

Overloading the atmosphere with carbon dioxide, increasingly more heat is drawn into a trap and Earth is warming steadily. Thus, compared to 1957 emissions of CO₂ in the atmosphere have increased by 25 percent. CO₂ absorbs heat reflected from the Earth's surface - heat that would otherwise pass freely into space later to release heat, warming the Earth's atmosphere. CO₂ levels rise, the pace accelerates warming. Satellite measurements confirm that less heat escapes the atmosphere today than 40 years ago. Although other gases trapping heat also plays a role, CO₂ is the primary contributor to global warming. [1]

2. EU DIRECTIVE on ENERGY EFFICIENCY in ROMANIA

2.1. The Regulatory Framework

The EU Directive on energy efficiency appears in the moment when “The Union is facing unprecedented challenges resulting from increased dependence on energy imports and scarce energy resources, and the need to limit climate change and to overcome the economic crisis. Energy efficiency is a valuable means to address these challenges. It improves the Union’s security of supply by reducing primary energy consumption and decreasing energy imports. It helps to reduce greenhouse gas emissions in a cost-effective way and thereby to mitigate climate change. Shifting to a more energy-efficient economy should also accelerate the spread of innovative technological solutions and improve the competitiveness of industry in the Union, boosting economic growth and creating high quality jobs in several sectors related to energy efficiency” [2].

In the initial plan, European Council established as an objective the saving of 20% of the member state’s primary energy consumption by
2020. In 2007, the same European body concluded that this objective is not on track and re-established its important in 2010, when “confirmed the energy efficiency target as one of the headline targets of the Union’s new strategy for jobs and smart, sustainable and inclusive growth (‘Europe 2020 Strategy’). Under this process and in order to implement this objective at national level, Member States are required to set national targets in close dialogue with the Commission and to indicate, in their National Reform Programmes, how they intend to achieve them” [3].

Being a Member State of the European Union, Romania adopted the EU Directive by Law 121/2014 on energy efficiency, which provides that improving energy efficiency is a strategic objective of the national energy policy, due to the major contribution that it makes to the achievement of security of supply, sustainability and competitiveness, to save primary energy resources and reduce emissions of greenhouse gases. In the Law is established a national indicative target of reducing energy consumption by 19%. [4]

In order to implement this law, is set up within the National Regulatory Authority for Energy, referred to as ANRE, through ANRE President's order, the Department for Energy Efficiency. Its main duties and responsibilities are:
- development of policy proposals and secondary legislation on energy efficiency;
- monitoring of the implementation of the National Action Plan for Energy Efficiency and related programs to improve energy efficiency nationwide, as well as energy savings resulting from the provision of energy services and other energy efficiency improvement measures;
- ensure market surveillance equipment and devices for which there are specific regulations on energy efficiency and ecological design;
- cooperation with domestic and international institutions and organizations in order to promote efficient use of energy and reducing negative environmental impact;
- participation in the technical evaluation, approval and monitoring of investment projects in energy efficiency, which is asked for funding from the state budget and other internal and external sources available to the Government;
- developing the synthesis stage of implementation of energy efficiency programs by operators;
- cooperation with authorized institutions in carrying out short, medium and long term evolution of demand on energy supply and energy efficiency indices calculation at national level;
- support, in collaboration with the National Authority for Regulating and Monitoring Public Procurement, the central public administration authorities to respect the obligations to purchase only products, services and buildings with high energy efficiency, to the extent that it meets the requirements of effectiveness costs, economic feasibility, viability increased, according technique and a sufficient level of competition;
- development, including through co-financing from the state budget or from own sources of studies for national energy efficiency programs and participation in projects declared eligible in energy efficiency programs and renewable energy initiated by international organizations. [5]

2.2. The Situation of Greenhouse Gases’ Emissions in Romania

Due to the inertia of the climate system, despite all efforts to reduce greenhouse gas emissions, average global temperature will continue to rise causing a negative impact on human and natural systems.

In order to limit the vulnerability of these systems to the negative effects of climate change are needed measures policies and measures which minimize the negative effects and maximize the benefits of the global warming on different systems.

In Romania, the situation of GHG emission looks like this:
As we can see in the chart above, from 2007 to 2011 the level of GHG emission, including LULUCF, decreased in Romania. The truth is that our authorities really got involved in this project and did everything in their power to reduce the emission of the greenhouse gas.

In this respect, in Romania’s National Strategy on Climate Change 2013-2020, are provided interventions in the following sectors: energy, industrial processes, agriculture, land use, waste management. Also, the authorities want to develop sectorial strategies in order to reduce GHG emissions. From my point of view these sectorial strategies would be a very useful tool because the results of the reports are worrying, as you can see in the next table:

<table>
<thead>
<tr>
<th>Sector</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total GHG emission</td>
<td>117,506.44</td>
<td>116,165.41</td>
<td>92,055.61</td>
<td>90,808.74</td>
<td>98,054.21</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>96,123.48</td>
<td>95,965.23</td>
<td>82,877.82</td>
<td>79,624.01</td>
<td>86,320.46</td>
</tr>
<tr>
<td>Industrial processes</td>
<td>20,624.73</td>
<td>17,945.58</td>
<td>11,253.06</td>
<td>12,414.25</td>
<td>12,605.14</td>
</tr>
<tr>
<td>Use of solvents and other products</td>
<td>137.82</td>
<td>135.14</td>
<td>122.33</td>
<td>124.74</td>
<td>125.61</td>
</tr>
<tr>
<td>Waste</td>
<td>5,602.38</td>
<td>5,677.92</td>
<td>5,703.17</td>
<td>5,715.62</td>
<td>5,366.48</td>
</tr>
<tr>
<td>Agriculture</td>
<td>20,236.92</td>
<td>20,753.53</td>
<td>20,353.84</td>
<td>18,760.94</td>
<td>18,941.46</td>
</tr>
<tr>
<td>The net quantity of CO2 (sequestration and emissions) and quantities of CO2, CH4 and N2O (emissions) related to LULUCF sector</td>
<td>-25,218.88</td>
<td>-24,312.00</td>
<td>-28,254.61</td>
<td>-25,830.81</td>
<td>-25,304.94</td>
</tr>
</tbody>
</table>

From the table above, we can see a slight reduce of GHG emission in the energy sector in 2010, but then, in 2011 it had an impressive increase. The truth is that with exception of agriculture, in all sectors was an increase in 2011. That is why I strongly believe that the level of GHG emission in directly related with the political situation of a country and its economy.

Romania has serious problems during the economic crisis and it is still not fully recovered. 2011 was a hard year for our nation and this is obvious in all areas. Seeing the different values in every sector of activity, I strongly believe that it is necessary a strategy for each sector.

What I am really interested in are the measures taken in the sector of energy. In the
National Strategy mentioned before, with respect to energy, the authorities took into account electricity and heat generation, transport, dwelling and urban development.

Energy is a sector of economic activity which includes GHG emissions from stationary sources and mobile, related to fuel combustion processes or leaks, equipment failures or accidents (known as fugitive emissions).

According to the national inventory of greenhouse gas emissions of greenhouse conducted by our country in 2012, GHG emissions related to energy sector represented in 2010 approximately 87% of the total, including LULUCF and 70% of the total excluding LULUCF. [6]

To comply with the national priorities of energy development in the future, including increased use of its own coal resources, our country has taken all legislative to promote technology capture and geological storage of CO2 (CCS technology).

a) Energy and heat generation [7]
In Romania the situations looks like this:

Our country's contribution to achieving Europe 2020 objective is a minimum of 24% of final energy consumption to be generated from renewable energy sources (RES). This means that we remove technical-functional and psycho-social barriers in order to use the renewable energy and in the limit of elements of cost and efficiency, promoting private investment and create conditions to facilitate access to foreign capital on the markets of renewables; promotion sectorial policies to ensure energy security by increasing the share of renewables in final energy consumption and reducing the dependence of economy on imports of primary energy; ensuring power supply in remote communities by harnessing local energy resources and ensure conditions for the participation of Romania in the European market "Green Certificates" for renewable energy. [7]

That is why we also need to promote Intelligent Systems for generation, transmission, distribution and consumption of electricity. Intelligent systems enable the development of electricity generation activities at the place of consumption, delivering the system when their consumption is less than the amount of energy absorbed from the system and when consumption exceeds the amount of energy produced.

These systems are managed through modern tools of information technology and lead to significant emission reductions of greenhouse gas emissions.

Also, as of 1 April 2011, became operational state's scheme to promote high efficiency cogeneration, which will apply until 2023. The scheme provides financial support to producers of electricity and heat holding or commercially exploit central high efficiency cogeneration which save fuel by at least 10% compared to separate production.

Moreover, in our country is used Carbon Capture and Storage. Since the national energy system relies heavily on fossil fuels and that changing this situation cannot be done quickly, the implementation of capture and geological storage of carbon dioxide will facilitate the transition to an energy mix in which fossil fuels to prevailing energy mix as they have a low weight. The objective of capture and geological storage of...
carbon dioxide is to reduce carbon dioxide emissions into the atmosphere from major sources of emissions from power generation.

Besides eco design and increase energy efficiency in agriculture sector, the state wants to continue campaign to inform people and businesses on the importance of increasing energy efficiency.

b). Transport [8]

According to estimates presented in the National Inventory of Greenhouse Gas Greenhouse developed in 2012, emissions of greenhouse gases (GHG) in the field of transport increased by about 155% compared to emissions in 1989. Furthermore, to 1989 share of emissions related to this field of total GHG emissions rose about 3 times, accounting for 8.8% in 2009.

The increase in transport emissions is due to increased mobility of citizens in the period 1990-2008, urban sprawl, the transfer of passenger and freight mainly by road, intensifying air traffic etc.

Reducing CO₂ emissions from transport should be achieved through an integrated, efficient cost method, combining innovation in the field of automotive propulsion technology and use of biofuels efforts by policy makers and consumers with respect to the adoption of a new attitude regarding the development of this sector.

The Romanian state wants to have good results in this sector by reducing road transport, which automatically means improving rail and public transport. Moreover, in this way is encouraged non-motorized transport.

Also, we want to have in our country as many as possible environmentally friendly vehicles and to encourage the use of biofuels. In addition, the Romanian Government has provided tax breaks for those who purchase hybrid cars to encourage purchase of such vehicles, and the development of fleet cars have also stimulated further. The use of biofuels for our country looks like this:

Of course, specialists are encouraged to continue developing new and modern methods to combat GHG in transport and there is a continuing campaign to inform the citizens about the benefits that we could have if we apply the measures mentioned above.

b) Dwelling and urban development [9]

Given that in Romania there are approximately 8.1 million homeowners and 4.85 million houses, the potential for reducing greenhouse gas emissions in residential and commercial sectors considerably. The energy intensity of the residential sector in Romania is 8 times higher than the EU-15, due to the inefficiency of heating and the lack of thermal insulation of most dwellings (apartments).

That is why our government decided to improve the thermal performances of buildings. In this respect, in Romania is a program, partially funded by the state, to rehabilitate thermal the houses and the buildings.

There are also encouraged the eco houses and the modernization of the transmission and distribution of thermal energy in centralized systems. There is also a Support program for improving energy efficiency in buildings occupied by people with low incomes. The project "Improving energy efficiency in households and low income communities in Romania" started in 2011, intended to increase energy efficiency in 40
buildings (kindergartens, nurseries, clinics, retirement homes, houses etc.) in low-income communities using local technology (traditional materials), within each area, and having a goal to reduce costs fuel consumption. The project can be extended to buildings occupied by people with low incomes.

In addition, there are programs to encourage consumers to purchase electrical items and appliances with higher energy efficiency and to reduce water consumption because it leads to a substantial reduction in energy consumption used in pumping water.

The Romanian legislator is well aware of the fact that civil society plays an extremely important role in all this process, which means that educational programs must continue in this sector too. Society receives more green areas for this. In this way, the government shows how our country could look if we were more responsible.

3. CONCLUSIONS

The minister of Environment, Waters and Forest said at the end on 2015 that we managed a decrease in emissions of greenhouse gases by almost half, as we also managed to diminish the harmful effects of other air pollutants: emissions of sulfur dioxide, which dropped by about 48%, or emissions of NOx down almost 30%. Recently, the Ministry of Environment has promoted a government decision to support local authorities in developing and implementing air quality plans.

It is obvious that the EU Regulation adopted by our country and transposed into National Strategy are useful: Romania is on the second place in European Union at reducing the emissions of greenhouse gases.

BIBLIOGRAPHY

[4] Law 121/2014, art. 1;
[5] Law 121/2014, art. 3;
[7] Romania’s National Strategy on Climate Change 2013-2020, pg. 8 - 12;