

ENVIRONMENTAL REGULATIONS IN ENERGY SECTOR AND RELATED EDUCATION SYSTEMS

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This paper presents some implications of the process of Romania's integration in the European Union, from point of view of the approximation of the environmental regulations. The emphasis is on the promotion of renewable energy and the measures in order to apply the Large Combustion Plants Directive in relation with the Limitation of Certain Emissions, but also on other directives relevant to the energy – environment relationship. The Romania's involvement in the Joint Implementation programs regarding climate changes is a first step towards the implementation, starting with January 2007, of two European Directives: the "Greenhouse Gas Emissions Trading Directive", and the "Linking Directive" between Emissions Trading and the Joint Implementation Mechanisms of the Kyoto Protocol. The environmental education is a process meant to improve life quality, serving the recognition of environmental values and clarification of environmental concepts. Environmental education can help people acquire knowledge, skills, motivations, values and commitment needed for the efficient management of the Earth's resources and maintaining environmental quality. This paper is an original contribution the application of a specific master program to the special relation - energy and environment issues.

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1. INTRODUCTION

In the recent years we are globally facing with a series of events having a tremendous impact on the economic, social and environmental activities. The obvious trends of global warming, ozone layer depletion, long-range trans-national pollution, are a few elements which prove the assertion made. Certainly, the debates about such phenomena, are far from having become universally recognized truths, by all scientists. Many believe that there are not yet sufficient scientific evidences to sustain the above mentioned scientific arguments. It is considered that some of those phenomena are due to the periodic changes of the atmosphere state and that more studies are needed, together with additional evidence and proofs. Others go even further, arguing that these debates are driven by "interests" of an economic nature. However one cannot deny that increasingly more scientific evidence is beginning to gather. Moreover, given the danger posed by non-sustainable human activities impact on the environment, we must always act, bearing in mind the principles of "precaution" and "prevention", in conformity with the actual environmental approaches. In his "Eco-Economy", Lester Brown (see Brown, 2001) pointed out that generally the mankind has considering the natural resources like a subsystem of the natural resources, when in fact the approach should be the reverse, the economics should be viewed as representing a subsystem of the of natural resources. The sustainability principle is trying to merely put on an equal footing three fundamental elements of development: the economy, the environment and the social issues. In the last years, the culture is considered as the fourth pillar of the sustainable development. Until a truly sustainable development is reached, requiring primarily a change in mentalities, it is better to act with care and prudence in everything we do. Of all the global phenomena which we are facing, we will try to present the issues related to the climate change, more specifically the trend of global warming of the atmosphere, the causes leading to it and the measures taken to limit the consequences on human and natural systems so vulnerable such as water, flora and fauna. We will try to show some measures and policies having like objectives to reduce the climate change-induced economic consequences.

The special relation between the energy and environment make the objective of many researches and scientific papers. In the same time different masters programs offered the possibilities of training in many fields of activities. Starting from the actual achievements concerning the environmental performances in the energy production and the best master programs we try to apply this outputs in a new master programs, having like objectives the energy, environment and sustainable development.

2. CLIMATE CHANGES AND ENERGY

The global warming trend of recent years is due to the "greenhouse effect", induced by additional generation in the atmosphere, as a consequence of human activities, of some greenhouse gases occurring naturally in the environment. Water vapours also turn to contribute to creating the greenhouse effect. Normally, when sunlight reaches the earth's surface it is partly reflected, reaching back into the space. The presence of additional greenhouse gases into the atmosphere has like effect the successive reflection of the caloric sunrays, thus contributing to the global warming of the atmosphere. Latest data show a rise in global average temperatures by 0.7 °C. The most important contribution to the greenhouse gases emissions belong to the energy sector, through emissions of carbon dioxide and nitrogen oxides resulted from the combustion of fossil fuels (coal, oil, gas) in large combustion plants. Important contributions are brought by transports, agriculture, municipal management. Landfills are an important source of methane emissions. In one scientific paper, 22 indicators are presented that highlight the current global warming trend. These indicators summarize the results of intense research of scientists around the world. The report was developed by the European Environment Agency in Copenhagen together with the European Topic Center on Air Quality, with the support of the Federal Environmental Agency of Germany and of the National Institute for Public Health and Environment in the Netherlands. The 22 indicators are covering eight major areas (see Impacts of Europe's Changing Climate, An Indicator- Based Assessment, EEA Report No. 2/ 2004, pp.2).

Based on all this arguments, highlighting the actual trends in climate warming, the policy-makers around the world has promoted an important number of regulations having like objectives: to limit emissions of greenhouse gases, increase the absorption capacity of carbon sinks in the Earth's surface, promote renewable energy sources. The best measures in the world were taken by promoting the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

They were reinforced at European level through the adoption of the 6th Environmental Master Plan, the European Climate Change Program, as well as of two important Directives, one on the greenhouse gas emission permits trading (Directive 2003 / 87/CE) amended by the Linking Directive (2004/101/EC). The latter is governing the correlation between the flexible mechanisms introduced by the Kyoto Protocol (Joint Implementation) and the emission trading directive.

Romania's National Strategy in Climate Change (NSCC) has been developed by specialists of the Ministry of Environment and other ministries under the coordination of the Ministry of Environment through the National Commission on Climate Change and with the Danish Environmental Protection Agency support. The overall objective of the strategy is: "The achievement of the commitments undertaken under the Convention on Climate Change, the Kyoto Protocol, the European integration process and the achievement of voluntary activities in Romania for adjustment to the climate change impacts." The draft strategy includes ten specific objectives. These are covering the following areas:

- Romania's compliance with commitments with respect to the emission limits established in accordance with the Kyoto Protocol;
- promoting measures leading to limit long term economic, social and environmental costs, caused by climate change;
- establishing the required political, legal and institutional framework;
- implementing the National System for emissions monitoring and ability to soil carbon sequestration;
- participation in the implementation of flexible mechanisms of Kyoto Protocol (JI EIT), maximizing the benefits for economy and environment;
- preparing the official position of Romania to further promote international policies and regulations after 2012;
- implementation of the EU directive regarding the trading scheme for emissions permits in EU countries and its implementation after January 1st, 2007;
- Continue the implementation of existing national measures to reduce carbon intensity, in line with the Community Acquis;
- incorporate climate change issues in research, education and awareness of public participation in decision making process;
- develop the National Action Plan on Climate Changes (NAPCC), monitoring its implementation and regular updating of NSCC and NAPCC.

When setting the objectives of this strategy three major areas have been considered, namely: the Convention on Climate Change, the Kyoto Protocol, European Union policy on Climate Changes. The Convention provides the general framework of implementation of the measures and commitments by 2000. The Protocol extended and set up priorities until 2012 and proposed, in addition to the "international trading of " emissions" provided in the Convention (not to be confused with the planned EU emissions trading), two flexible implementation mechanisms: the "Joint Implementation" and "the Clean Development Mechanism-CDM". Romania currently participates in the implementation of the Protocol only through JI projects and is preparing for the EIT

mechanism. In the future, a possible involvement of Romania in CDM projects, implemented in developing countries, is to be expected. EIT projects have the advantages of flexibility and delivery in "green investments" (investments in environment, to reduce pollution in general and not necessarily to reduce the emissions of greenhouse gases).

As regards the EU policy in the field of climate change, this is based on two programmatic documents: the European Program on Climate Change and the VI Environmental Framework Action Program of EU for the period 2001-2010. As legal instruments for implementing the European policy on climate change were promoted the Emissions Trading Directive and the Linking Directive with the Kyoto Protocol (see Impacts of Europe's Changing Climate, An Indicator- Based Assessment, EEA Report No. 2/ 2004, p.3).

Education and public awareness, in terms of decision making, are key-elements of any nature conservation strategy. That's the way to gain public support and to promote sustainable development, by improving the degree of knowledge and understanding of environmental issues, among population.

By developing coordinated programs of ecological education and education/awareness strategies for the public, we can promote values supporting the understanding of nature conservation and discouraging activities incompatible with sustainable development.

3. THE NEED FOR ENVIRONMENTAL EDUCATION

The environmental education is a process meant to improve life quality, serving the recognition of environmental values and clarification of environmental concepts. Environmental education can help people acquire knowledge, skills, motivations, values and commitment needed for the efficient management of the Earth's resources and maintaining environmental quality. The objectives of the environmental education around the world are similar: to maintain and improve environmental quality and to prevent future environmental issues. Paradoxically, the more educated and advance a society is, the bigger its impact on the environment is, due to higher needs and pollution levels. The conclusion is that education solely is not enough for sustainable development.

In areas with low levels of education, the economy is usually reduced to agriculture and extraction. The higher the level of education, the more sophisticated industries appear and consumption is elevated, just as pollution is etc.

All these aspects emphasize the complexity of the connection between sustainable development and education.

All the above mentioned environmental aspects are carefully analysed and presented by the Faculty of Marketing and International Economic Affairs from Spiru Haret University in a new master program having like objective to raise the awareness of students concerning such important issues like sustainable development and a competitive economic environment, affected by the climate changes phenomenon. In the Masters program entitled "Ecological Marketing and environmental management", the students are learning about the "Clean energy sources" in view to clarify concepts, principles, methods and environmental friendly techniques specific for the renewable energy use. The main objective of the course is the training and development of skills, necessary to promote sustainable "green" energy alternatives, with increased efficiency (see Jeleu, 2009, pp.60-61)

The specific objectives of the course are:

- Creating a proactive attitude in regard to the impact of energy on other areas of society: particularly in the area of the renewable energy;
- Developing specific skills related to the interpretation the eco-efficiency of production and consumption of energy and its role in social development;
- Creating competency in the analysis of the effects of energy market developments on the general market.
- Creating skills related to the marketing of products that explicitly include an energy component.
- Creating skills related to the energy market access and the trading of energy products; particularly competency related to the market analysis of both energy products and products that explicitly include energy components.

The concern and the hope of the entire world are directed towards those who will be the beneficiaries of a healthy environment and in the same time influencing the maintaining and improvement of the relation MAN – NATURE: the youth. The United Nations declared the decade 2005 – 2014 as dedicated to the Education for Sustainable Development. Chapter 36 from Agenda 21 (see Agenda 21- 1992,pp..5) relates to the importance of the education for sustainable development in the following terms:

- necessity to reorient education as promoter of sustainable development
- sustainable development awareness

- training importance

In reorienting education for sustainable development, the initiators of education programs must find the balance between future knowledge and the traditional way of life. Very often, the traditional way of life surprises us with ecological solutions to resources usage. Returning to this way of life may be impossible for those living an urban life, but the cultivation of the traditional values could be a good support for the 21st century sustainable development.

The progress of a country is closely linked to the effectiveness of its educational system. In a time where globalization requires developing as many skills and qualifications, the education is vital to give everyone a chance to integrate into the new system. We need a new approach to this area, which is an investment in a secure future. The trial of education-research-innovation processes is extremely important for our society. Therefore, we must proceed with utmost caution and drive the necessary transformation so to not destroy the actual good achievements.

Current economic crisis shows once more that, to be more prepared to face a world in continuous and rapid change, business needs to know so well the social, political, traditional and ethics of each country in doing business, and the external trends. Unfortunately, traditional business schools of higher education do not prepare their students for such profound and diverse socio-political transformations.

Schools, in general, business and economic faculties, in particular, have a huge responsibility: they prepare the future leaders. The current crisis shows that rather there is a need for greater and deeper awareness of business that enhance the social, rather than a focus on business opportunities and how to make money, so prevalent was before. The present situation represents both a great opportunity and an obligation for Romanian economic education. Worldwide new approaches occur that can change even the most liberal economic minds. The role of the state is reviewed and his importance is increased in the actual crisis conditions. The operating banking system is analyzed to find solutions to revive and re-launch credits. It highlights the banks tendency to grant loans to the state in the conditions of liquidity absence on the market. The state becomes to be a serious competitor of the private companies. Increasingly complex problems posed by the vulnerability of natural resources more limited and often affected by climate changes, complicate the situation. Here are all the elements whose elucidation, universities can contribute substantially, through their human and scientific potential. The economic colleges have to think about good teaching, so that future business people to better understand the socio-political and environmental conditions, affecting their business. This is what the Faculty of Marketing and International Business from Spiru Haret University has been doing.

Strategies and tactics of business can profoundly affect society, economy and governments and, last but not least, the environment. This Faculty stipulated the needs for a new generation of managers in advance, even before the current economic crisis, so that the new master programs help the future business people to better understand the social, political and cultural barriers and the needs for a growth of business in today's volatile markets

Training young students in environmental issues and promote environmental products and services is essential to create the field of marketing skills in the context of current approaches to the environment. In particular, the market for organic products and eco-label system are priorities for Romania, but also for many European Union countries. Following completion of the negotiation of Chapter 22-Environment, Romania has among many other obligations the task to implement EU directives on eco-labels. In this respect, Romania passed a large number of government decisions governing the organic products such as refrigerators, laundry, washing machines, paints and varnishes, footwear, textiles, bed mattresses, electrical and electronic products, etc. In addition to the industrial products above mentioned, another important category of organic products are the agriculture and food with the use of natural fertilizers and limited quantities of chemicals. For the marketing of such products is essential to know the technical conditions to be met in terms of the environment in accordance with the decisions of government harmonized with EU directives.

The ecological value of these products is an important element in gaining customer appreciation. At the same time, training students in this area is a priority for Romania in order to consolidate a functioning market economy, in which small and medium-sized enterprises play a major role for the formation of a strong middle class. In this sense, learning by students of some marketing skills in the context of drawing the attention to the ecological nature of such products, have great significance for the university training. The main objective targeted by the master program "Eco-Marketing and Environmental Management", is improving the quality of training students in the field and the acquisition of new skills and competencies to promote organic products on the Romanian market.

The Master Cycle is the second level of a higher education. At the end of this cycle a master's degree is awarded and provides training on specializations, the students acquire advanced knowledge and skills in economic communication and information handling in order to improve economic performance training. The graduates of this course are specializing in issues of environmental and tourism marketing, with advanced knowledge about the environment, ecological agriculture, renewable energy, business and sustainable planet.

Through this new education offer, the Faculty of Marketing and International Business intends, besides teaching the future business leaders to understand the theories of international "best practice" in marketing, accounting, management, environment protection for to create a new generation of managers who can think both globally and locally, while applying the best practices and standards of global business, but knowing the realities of local political, social and environmental aspects of each market .

Our system of education does not exclude anyone, even the elders. Adults have indiscriminate access to all forms of training to be able to re-qualify and reintegrated into the labour market. Lifelong learning is also an objective of the European Union.

CONCLUSION

One of the main problems, for the development and our civilization, rising many concerns to the scientists, is to provide the needed energy for the progressive development population's living standards.

The need for transformation and change is evident and it is the responsibility of this educational program of master to teach students not only to know how to solve problems but to solve them better. Till now many educational and master programs were elaborated for specific fields of activities. The present paper has like an original contribution the application of a specific master program to the special relation - energy and environment.

All the teachers should do every effort to ensure that future business leaders who will attend the master program "Eco-Marketing and Environmental Management "will be aware of the political, cultural, social and environmental aspects of our country and, therefore, their business may respond more quickly and more effectively to the actual challenges. As leaders, they will better understand the impact that their business may have on society as a whole.

REFERENCES:

- 1 Brown L.-, *State of the World : A Worldwatch Institute Report on Progress Toward a Sustainable Society* , ed. Tehnica, Bucuresti,1998
- 2 Brown L. - *State of the World* , ed. Tehnica, Bucuresti, 2000
- 3 Brown L.- *State of the World*, ed. Tehnica, Bucuresti , 2001
- 4 Brown L.- *State of the World, : A Worldwatch Institute Report on Progress Toward a Sustainable Society*, ed. Tehnica, Bucuresti, 1986
- 5 Brown L- *State of the World, : A Worldwatch Institute Report on Progress Toward a Sustainable Society*, ed. Tehnica, Bucuresti,1988
- 6 Brown L.- *State of the World*, ed. Tehnica, Bucuresti,1990.
- 7 Brown L. -*The World Watch Reader on Global Environmental Issues* , ed. Tehnica, Bucuresti., 2002
- 8 Brown. L.-*Eco Economy Building an Economy for the Earth* , ed. Tehnica, Bucuresti,2001
- 9 Brown L.-*Plan B 2.0-Rescuing a Planet Under Stress and Civilisation in Trouble*,2006
- 10 Gore Al-, "*Earth in the Balance*" ed. Tehnica, Bucurest,1995i
- 11 Gore Al-, "*An Inconvenient Truth* ", ed. Tehnica, Bucurest,2006.
- 12 Jelev I.,*The energy-Environment relationship in the context of Romania's integration in the European Union ,Emerg I-Energy,Environment,Economy,Resources,Globalization*,ed. Agir, Bucuresti,2005
- 13 Jelev V.- *Master Program File for accreditation "Eco-Marketing and Environmental Management"*, vol.2,internal source- Spiru Haret University,2009
- 14 *** Impacts of Europe's Changing Climate, An Indicator- Based Assessment, EEA Report No.2, Copenhagen. OPOCE), Luxembourg, 2004
- 15 *** Agenda 21-The Rio Declaration on Environment and Development, Chapter 36: Promoting Education, Public Awareness And Training, 1992
- 16 www.edu-gate.ro -*Pentru revitalizarea educatiei in Romania*