Sustainable development and worldwide controversial issues regarding the auction of pollution right

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Abstract: *The present study investigates one of the most up-to-date scientific and pragmatic problems faced by the evolution of the human society, by the European Union and by the future of this planet: pollution as externality of the economic growth.*

The inclusion of the sustainable development objectives in the framework of the ambitious goals of the Lisbon Strategy is launching once again several controversies concerning the analysis of the global auction process of pollution right. Linked to the context, the study considers the economic fact through and with the help of the results of scientific economic research by using the design theory (award of the Swedish Academy for Economy, 2007).

We need to mention that the theoretical and practical nature of the study is based upon the recents conclusions of the Copenhagen Summit, underlining the normative-positive report that governs the economy.

Keywords: 1.Pollution – externality of economic growth; 2.Pollution right; 3.Unused pollution rights; 4.Design theory; 5.Tolerable carbon rate; 6."Green" economy

Despite all warnings received, most countries in the world are still focusing on consumption of high revenues generating raw materials by which, deliberatly justify scientific research expenditures from various fields.

The chase for economic performances, especially for diminishing the effects of the financial crisis makes difficult to assume the responsability of the European countries and big economic powers (USA, Japan) in what is concerning the carbon emissions cut that will not lead to the overstep heating above 2 degrees Celsius. Sources and informations belonging to the European Commission specify the efforts of Met Office together with other

66 international institutions to build 5 restrictive climatic models for those greenhouse gas categories that, generated by the humans and plants, are accepted until the critical level of 2 degrees Celsius *(The maximum carbon dioxide concentration is actually of 400 parts/million, not allowing surpassing the level of de 450 parts/million. The danger is that, in future years, without drastic measures imposed by the reducing emissions policies, the temperatures to increase up to 4 degrees Celsius, with major negative impact for population, animals and plants.*

(Assessment report on global warming – European Commission, 16 November 2009).

With all declarative measures on assuming the responsibility on cutting the CO2 emissions, the European Union is oversteping with 5% the limits of 8% stipulated in the Kyoto Protocol (1997). *(Recent reports of European Environment Agency (EEA) prove the EU possibilities to cut emissions up to 13% until 2012. From 15 countries that signed the Kyoto Protocol (1997) except for Cyprus and Malta, which joined later, 12 have formulated, besides the EU common objectives in this area, economic measures by individual policies. (Euractiv, 13 November 2009)*

It is worth mentioning that the older EU countries have recorded shortens up to 6,2% under the limits of 1990, caused not by the cutting down efforts, but by the economic crisis that lead to closing down pollution causing companies. So, the financial crisis proved to have a positive impact after all!

Another sensitive point as effects and implications is concerning the "safeguarding" policy provided by the EU Emissions Trading System (EU ETS) and the objectives regarding the renewable energy strategies. **From this point of view, the opportunities provided by the Kyoto Protocol have leaded the way to the auctions of pollution rights (purchase of carbon credits).**

The month of November 2009 was dedicated to the preparation of the Climate Change Copenhagen Summit (that took place in December 2009). Before that, the summit was prepared during the first Transatlantic Council USA-EU on energy that failed to accurately set up cutting down of carbon emissions by USA. The justification provided by USA is related to the non-existence of a national legislation on climate. Due to the fact that there are other countries that face difficulties in drafting and implementing a national legislation on reducing the carbon emissions, the Unites States of America cannot avoid to formulate some realistic measures.

Since today the financial crisis is interlocked with the necessity of adressing the climate change, the Transatlantic Council on Energy has brought into discussion the targets of the sustainable development. These are conditioned mainly by two objectives: cooperation on energy policies and technological research. This new approach of building a sustainable energetic system provides opportunities to foster innovation and renewable energy, but also to obtain new jobs.

Although that climate change is visibly worring the worldwide public opinion, governs, decision makers, consumers and producers, this subject was not able to make a profound impression on the Transatlantic Council on Energy, the recorded progress being insufficient.

The main reason of this failure is represented by the controversial opinions on the obligativity of cutting down emissions imposed only to high developed countries; the USA position that is conditioning the reduction of carbon emissions to the reaction to this

objective of other countries (India and China particularly); the impossibility of continuing the Kyoto Protocol with a new change climate treaty; setting up of clear arrangements of both developed and developing countries.

Having no regard of the development level, the present financial crisis generates an anxious problem within developing countries, which are expecting more firm measures of economic support from the developed countries in what is concerning the purchase of carbon quotas. Alarming information regarding the pollution quotas that can be accepted without an increase of human and environment safe temperature have determined drafting up some predicting scenarios of a pollution peak in the next 10 years (2010 – 2020), with the possibility of a total reduction until 2100. The pollution phenomenon, collateral effect of the economic growth and development is becoming a constant menace for our present and future life.

1. The impact of sustainable development upon the economic reasoning

The obsession of economic growth from the '70s has been fed up by the tendency toward extensive and unlimited consumption of the resources, due to the free access of the highly economic developed countries to the raw materials grounds.

Vice versa, the passing from the extensive development to the intensive one, marked by the petroleum crisis from the '72 -'75 has changed the paradigm of resource used by maintaining though the same goal: economic growth – development. Despite this, the global political-economic-social picture is in a continuous change, being animated by new tendencies that radically affect the evolution and interpretation of economic facts.

The economic rationality has served in different ways the decisional process of systemic exploitation of resources, in view of economic development and growth, against the obsessive-intensive processes of the launching period of the sustainable development concept (SD).

The objective logic of development is influenced and even replaced by the subjective interpretation of the same rationality principle. Today, global economic reasonings are influenced by measures that generate human and material damages, due to the competion and profit chase. The situation is firing back against the humans and the society, inducing a new analysis of the development terms under the principle of sustainable development.

The spring of 2007 has represented for the European Union a firm start of the correlation process of the environment protection activities, pollution, global warming and adressing the energy problems from both point of views of producer and consumer.

On 8-9 March 2007, during the session of European Council, it has been adopted un unprecedented agreement regarding urgent measures for environment protection. The agreement has stipulated 3 ambitious objectives to be realised until 2020 : 20% from the EU energy mix to be "green", cutting down with 20% the CO2 emissions, increasing the percentage of using biofuels in transport with up to 10% in total.

At the same level of political and strategic importance, this issue has been adressed within three main areas: European energy policy, cuts of greenhouse gas emissions in order to limit the global warming, continous development of Lisbon Strategy.

Thus, ambitious quotas of using the green energy have been proposed: Europe must use in a 25% renewable energy and should cut greenhouse emissions by 30% as against 1990. Although these objectives have been objectively and well-argumented backed up, the EU Member States have hardly agreed to approve a quota of only 20% renewable energy and an effort of 20% cut of greenhouse emissions. Finaly, the environment ministers from the 27 member states agreed upon one binding unilateral reduction of 20%, valid only on EU territory.

For countries like Romania, this quota has represented an acceptable maximum from the point of view of national possibilities of applying the reduction schemes of emissions. Taking, responsible, the position of new EU Member State, Romania has the interest and obligation to defend and promote the national economic interests and traditions in what is concerning the energy production and consumption. *(For our country, energy is not an issue since România owns sources of renewable hydro-energy and the implementation of the 20% quota of renewable energy, set up at EU level, is considered as normal and acceptable.)*

Regarding the present debates from Copenhagen, our country has responsibly and unreserved supported the proposed programs and measures. *(At the recent summit in Copenhagen, in December 2009, Romania has sustained the cut of 30% of carbon emissions. The advantage of our country is represented by the opportunity of using structural funds for European environment programs, which represents a support for macroeconomic efforts of modernisation.)*

The 20% quota of the consumed energy by the Europeans must be "green energy" (obtained from renewable resources); despite this, this target must be adapted to the energetic specific of each country, to the natural energetic possibilities and its quality, since not all countries own similar energy sources.

The problem of including the nuclear energy in the category of non-conventional energy has been another challenge for the representatives of EU states. Since it is not considered a renewable source, the nuclear energy can be taken into account, but also, it can be an option to the cut of greenhouse gas emissions. A big success has recorded the proposal that Europe to become a leader in fighting against global warming, although the employers organisations from the automotive industry have not been very enthusiastic. In this regard, there are expectations of a radical modification of the consumer behaviour from the automotive market that will choose alternative ways of transportation. *(The automotive manufacturers – European Automotive Manufacturer's Association (A.C.E.A) has proposed an increase of the minimum tax for fuel, for diesel commercial engines with almost 20% in the next 7 years, in two steps. Cutting down the CO2 emissions and its correlation with this tax have significantly influenced the demand and the offer, due to the fact that 11 EU countries have already procedeed to correlation measures of the two indicators. Consumers of this market wish, more and more, powerful cars, safe and big. These kind of automotives are also big consumers of fuel, that do not respect the compatibility with the new aproach of environment and consumers protection. Introduction of a unique taxing system will determine the orientation of the demand towards less polluting cars, able from the fabric to cut up to 5% the quota of CO2 emission. Despite this, the 2005 proposal of A.C.E.A regarding the unique tax at European level for CO2 emissions*

up to 50% has been withdrawn, following the refuse of EU Member States to cooperate on this matter.)

2.Competition oversteps sustainable development

If the choice stimulates competition, then the opportunity cost of the choice will be marked by the conditions imposed by the competition. As a result, one can choose either policies to set up a unique tax (the pollution right is paid on the basis of the principle the polluter pays) or modified energy policies, oriented towards new sources. These policies are in constant need for substantial investment in research and innovation.

The first option is based upon the car producers interest that responds to the market demand; the second option responds to the protection criteria of the human being, society and future generations. Europe has now the decide between these two options that are pointing out, each of them, a major objective: economic profit, according to Lisbon Strategy and social and human benefits, according to the sustainable development concept.

In the light of these conclusions, the study interprets the economic fact through and with the help of the economic scientific research results (design theory) *(The design theory represents the result of methodical and continuous research of three americans - Leonid Hurwicz, Eric Maskin and Roger Myerson, whose research fields have scientifically crossed, by elaborating concepts and demonstrative mechanisms for one of the sensitive areas of the market, that of transactions within companies. The design theory has been awarded the prize of the Royal Swedish Academy for Sciences for Economy, 2007)* enlightening the normative-positive report that governs economy. The economic benefits can be assimilated with the socio-human benefits if the economic competition can be reconciled with the social and environmental responsibility, the decision of the leaders to build a better and more powerful Europe, for the citizen' benefit. In essence, the economic objectives cannot be separated from the social objectives, since the consequences are reciprocally supported. Economic development and growth are triggering as collateral effects, negative externalities – pollution. The impact of this conditionality relation is on the air as public asset that becomes in the globalization context, a global asset.

As a result, "the pollution right" involves and determines to apply the principle "the polluter pays", the imperative of setting up of a "pollution price" that derives from the apparition of the air market phenomenon, with all the features of a market: competition, demand, offer and auction of the pollution right.

By its construction, the Lisbon Strategy aims mainly two objectives: economic growth and job creation. As a strategy, it envisages economic competitiveness, social inclusion, environment protection – all objectives belonging to the sustainable development. In return, a veritable race is launched between the "economic EU competitiveness" objective that generates negative externalities like pollution effect and globalization that points out most of the times, indifference towards a balanced development in report to the environment.

On the other hand, sustainable development has seven priorities, most of them related to the environment state and quality: climate change and clean energy, sustainable transport, sustainable production and consumption, preservation and management of

natural resources, public health, social inclusion, demography and migration, poverty, challenges of sustainable development at global level.

A flagrant shrinkage comes into sight since drafting numerous objectives is triggering conflicts felt by the market and population. Of course, these contradictory effect will be visible also on economic and social policies elaborated at European level. In order to tackle this matter, it it impreative to be taben into account the following two points of view:

a) the report between sustainable development (with its priorities) and Lisbon Strategy that targets competitiveness through economic growth and job creation (that means economic development),
b) the report between sustainable development and EU economic competitiveness facing globalization (competitiveness that flows froms the economic growth with its negative externality effects).

These objectives put on two different agendas, one economic and another politic states the concern towards increasing economic performances within EU. They are aiming to correlate the performances with the principles of sustainable development and in the same time, to benchmark EU economic performaces against the rest of the world, submissive to the sustainable development need. There are two conclusions : first, the sustainable development strategy is shaded most of the times, even within the eco-social policy by the Lisbon Strategy objectives; second, there is the need to better coordonate the national efforts with the EU efforts. These results are though less visible and felt.

3. The global auction of pollution right.

The cuts of the gas emissions that are pollution the atmosphere is a top priority objective for all the countries. The problem is that different countries have different visions of this reality. The existent situation is emphasizing the difference between the economic interests, on increasing the profit and the social ones, regarding the future of the planet.

KYOTO *(Among the 127 countries that signed the protocol (period 2004 –2005, after its signing by Russia) it was not USA that causes over 36% from the emissions that pollutes the whole world. USA, in its official statement, making a direct connection between pollution and production of goods, has expressed its disagreement regarding the cuts of the pollution quotas. The reason is that this way, the American economy would lose jobs, this leading to the "economy ruination" (according to President G.W. Bush). Other states that refused to join and sign Kyoto Protocol are China and India, which are now passing an important period of economic development and growth and cannot afford to adopt restrictive objectives).* Protocol has set up judicial provisions for cutting down the emissions of six categories of polluting gas that have an impact on the decrease of the ozone mantle and effects on amplifying the solar radiations on life. In addition, the same protocol has forced the signing countries to completely and accurately inform and communicate among them. The role of information is vital for the obtaining the NASH balance and thus in eliminating the asymmetrical character on the competitive market.

Also, as it will be pointed out in the present study, the "design theory" explains the role of the information in the double

auction of production and access to the public assets, theory that we have adapted to the use of the „air" as public asset.

The protocol that has been periodically updated, based on the current realities is comprising different ammendments, out of which two are important for the study.

I. First amendment is reffering to the right that pollution generating countries (those countries whose development is linked to the economic growth based on high consumption of raw materials) in order not the affect the development to be able to purchase pollution quotas from other countries that are willing to commercialise this right following of a less intense or even non-existent development .

II. The second amendment is reffering to the fact that, instead to apply the quotas of reducing the gas emissions (situation that embarasses developed countries focused on increasing the economic competitiveness), there can be overtaken quotas (meaning the right of emission) of other countries that are either prepared to do it due to the use in their own economy of high tech methods or in need of money, are interested by this kind of commerce.

Despite this, the Copenhagen Summit has launched a vivid debate related to the costs that will be supported by the developed and developing countries. Apart from the problem of cutting down emissions there have been formulated two separate opinions concerning the obligations to support the pollution consequences based on:

a) wealth of each country;

b) how much pollution is generated by each country. The geopolitical location has become a controversial factor and in addition to the debate regarding location on Nord – South, it was launched another one, between East-West. *(Austria, France, Japan, Norway, Great Britain and USA have announced an immediate support of 3.5 billion $/3 years for "cancellation and if possible, reversal of deforestation from developing countries". Japan alone has proposed 19.5 billion $, out of which15 billion are from public funds for a period of 3 years in order to help most vulnerable developing countries to cope with climate change problems.(Copenhagen, December 2009).*

The general atmosphere of the Copenhagen Summit was marked by the suspicion that poor countries are lobbying for a „new world order". Thus, the final negociations have been difficult and tensioned due to the initiative of emergent and developing countries to transform the summit in a settlement of global governance issues, where western industrialised countries to lose its dominant position. (Euractiv, 17 December 2009).

The air, as natural resource with a regime of free asset and unrestricted access, becomes in this global context an example of irrational use. Furthermore, its usage generates one of the most alarming negative externality - pollution - that affects the general welfare. Since no one is paying for the respective asset, the dreadful effects of the economic activity are not taken into account until they become embarassing as implications in life, society and environment.

From a theoretical point of view, the costs related to the productive activities are reflected on the market, that does not point out the social costs felt by the society. In order to tackle this economic and monetary injustice, the state uses the fiscal policy that is taxing economic activities and services having negatives effects on the people and

society. *(The problem of externalities, as market failure has been introduced in the economic theory by A. MARSHALL; this theme has been then theoretically updated by A. C. PIGOU ("Pigouvian tax"), R. COASE (with its well-known theorem), Andrew SCHOTTER (the "lemons" paradox) and probably the investigations will continue due to the increased interest of economist to internalise the effects produced by the interdependency of companies activities. Especially, that in the context of new relations based on the globalisation of integrated activities of trans-national corporations, the costs and benefits are transferred in an international regime. As result, the effects of these activities (externalities) will be submitted to the negotiation regime through international auctions. The most convincing example is "the auctions double mechanism of a public asset" proposed by the "design theory").*

It is obvious that the environment protection will be undertaken from now with big and consistent financial efforts both from the companies and the consuming population that in the end, is supporting through the environment taxes, an important part from the costs of this pollution. The companies will increase its delivery price, due to the taxes imposed by the international organisations that have to obey the provisions of the protocol and the increased prices will be supported by the beneficiaries. **Paradoxically, the welfare of the XXI centrury will be diminished as there will be adopted measures to increase the welfare.**

The problem of trading the dioxide carbon emissions was outlined in 2005, when the European Union started to adopt projects on cutting down these highly polluting emissions. The fact that EU Member States do not have the right of nationally allocate pollution quotas for the indigenous producers (indicating a protectionist economic policy) has determined a radical change. In this context, in Copenhagen, it was questioned the issue of unused pollution rights, due to the fact that some states have not reached yet its pollution limits. A new dilemma has emerged: cancellation or prolongation of these rights in post-Kyoto period?

New options have been outlined: **opening of auctions of pollution rights or, in certain cases for certain countries, free allocation, according to the EU legislation of a possible pollution quotas.** *(The power sector, considered as the biggest polluter, will be subject to the auction of pollution right starting with 2013 and the other sectors (aviation included), starting with 2020.)*

As staging, the process of purchase of pollution rights will officially start in 2013 (with 1/5 of certificates) and it will end in 2020 when all fields of activity, considered as pollutioners will have to comply to the same trading rules. The revenues from the auctions will go to the participant countries at the auctions and will be directed towards research.

On the other hand, an ethical issue appears in the economic policy: if developed countries, on the globalisation principles, are exporting productions and all polluting activities in countries where there is no environment protection legislation, EU will have to further issue free pollution certificates in order not to reduce activities at the expence of jobs and economic development.

The conclusion is : in a first stage, there occurs a decentralisation process of awarding pollution certificate at national level follwing that in the second stage, this process to be balanced by centralisation at European level. This ambitious project of cutting down emissions by 20% until 2020 as against 1990

raises though serious economic, legislative, moral and ethical issues.

From the point of view of the undertaking method, the auction of the pollution right is the mechanism officialy recognised as being adaptat to the market laws, where the profitability principle rules as top priority.

In order to rationalise the adaptability of the design theory to the economic reality of the global auction of pollution right, there is a need to know some aspects related to the theoretical content, role and functions of this theory as scientific tool to asses the conclusions found in the market decisions and economic policy makers.

Globalisation and the need to improve the market institutions have determined a reconsideration of the performances of the competitive market and outdated economic institutions by the modifications of the negociation conditions between companies. From this point of view, the role of the complete and accurate information becomes a featuring element for the succes or failure of a negociation. As a result, the state has to interfere on the market in order to correct the its limits.

From a theoretical point of view, the design theory is part of the atractive issue of externalities and supporting private and social costs by the direct consumer and society. Also, design theory is referring to the review of the fundamenting concept of economic policies with regard to production of public assets and acces to this category of goods.

Starting from these premises, we can link the issue of the air, as public asset unrestrictedly consumed, the pollution effect as negative externality drawn by the economic policy of development and growth and the mechanism of auction of pollution right, that we are explained through the theoretical input of the three researchers.

We have to mention from the start that if the transactions do not have an open character, meaning a free market, they will be marked by different interests of the companies (generators of pollution in our analysis). This will determine the need to conduct private negociations between people and groups of interests on one hand and governs involved in trading the carbon quotas, on the other hand. The authors of the design theory have assessed the way through certain institutions can create proper conditions for undertaking the negociations, that a maximisation of the profit can be reached (for both society and producer).

The public market, in our example, is a market that asseses ETS carbon emissions, fixes quotas and participation conditions to the auction of pollution right and finally sets the price ... of the pollution and therefore, of the air !!! The fact that air is an unreplaceble asset, its substitution being impossible makes difficult the conditions in which the carbon quotas market is working, due to the fact that the price and quantity will depend on some decisions that will determine different reactions among competitors, affecting the society and the environment.

In the case we are analysing, the transactions are carryed out by multiple institutional arrangements, meant to defend both the policies of economic development and the level of the profit.

The design theory outlines the optimum mechanism of participation at the negociations of the sellers (countries that are willing to sale its pollution quotas) and buyers (countries that do not give up to its economic development that generates pollution).

The design theory has focused especially on the optimum supply with public assets. No market can ensure an optimum and efficient allocation of the resources and furthermore, of the public assets like air. This is why the design theory helps to understand the rationale behind the necessity of governmental funding of the public assets through taxation system.

The principle „the polluter pays" determines two different situations, for two categories of polluters that will have to support pollution taxes : at micro-economic level, the individual has to pay the auto buy tax and at macro-economic the producers will pay for the right to continue its economic activity.

The design theory allowed the economic researchers to analyse using a new interpretation of the game theory, the process of price setting during the duble auctions. In these conditions the buyers and sellers are announcing the prices of the offer and demand to the auction. The auction of the pollution right facilitates the meeting of several countries (buyers) and several countries (sellers), thus taking place two types of auction that can be expanded at state level – institution. The agregated demand will come from the countries that buy the pollution right and the agregated offer comes from the countries that sell pollution quotas. The collected information (regarding the individual or collective willingness to pay for a public asset) will be reflected by the balanced prices.

Certainly, the decision mechanism will differently influence the behaviour of the entrepreneurs, since they will have to choose between the two objectives: profit or social welfare. To sum up, the decisions regarding the support of big or small pollution quotas will depend both from the level of economic development and the support of one of the principles: **sustainable development or economic competitiveness.**

Depending on the political and economic choice, the countries that enter to the negociation will favour big quotas if they are supporters of a clean economy with sustainable perspective in the future or, on the contrary, will support the cut of the quotas in order not to affect the economic growth and loss of jobs.

The decision is for the eco-social policy makers of the respective society to take, by assuming the responsibility towards the economic and social progress of that country. Here, it can be mentioned the opportunity cost of selecting the level of the pollution quotas.

The question is if there is the possibility to reach a behaviour balance of the two categories that express the demand and the offer. This process it is realised through negociation since the distinct behaviour it is based upon the different objective functions. The globalisation will expand the rationale from micro to macro and even worldwide. Finally, the private cost will face the social cost, that will determine to a pack of decisions materialised in economic policies. The market design will interlock with the political decision.

In L.HURWICZ's conception, the balance in negociation it can be reached if there is a compatibility between the incentives of the two categories of participants; this compatibility is reached on the *revelation principle*. The principle highlights the fact that any result materialised in equilibrium can be multiplyed through an compatible incentive mechanism (profit expressed in money, for each part of the negociators).

Developed by R. MYERSON, the revelation principle states also the success of

entrepreneurs that are accepting the moral risc of their actions, in our case, the free adoption of negative externalities that generate profit.

The design theory is based upon the principles of the games theory. This requires a previous foreseen of the participants behaviour (in our analyse, two categories of countries that follow each the advantage of big/small pollution quotas).

The assessment of the demand, offer and the determination of the pollution pressure upon the environment are providing the pre-requisites of selecting the negociation mechanism according to the different goals of those involved in the negociation. If, at these premises, there is added the use of „revelation principle" (taking into account the compatibility of the incentives for the two parts involved), the success of the negociation is granted for both seller and buyer. The theoretical succes of the design theory, confirmed by the practice is influencing the economic policy and market institutions.

The allocation and re-allocation of the emissions quotas is the differentiation mechanism of the objectives of those two categories of countries: developed and developing, that refletcs the development programs of its economies. On the other hand, the proposal to use biofuels has its supporters and enemies, depending on the effects triggered by the pollution of the environment and decrease of food safety.

In worldwide language there is more room for new concepts and terms like : healthy green industry, clean economy, global market of carbon quotas, green technology, decarbonisation of industrial economies, alternative energy, etc., all meant to prove that the world is passing through a profound and irreversible change.

The strategy becomes a safe solution when there are not so many options, in terms of our analyse, the negociation strategy becomes the only way to make compatible different objectives of the demand and offer in terms of the countries that sell and buy pollution right in the name of development, growth and global economic progress.

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