European Union emission trading scheme (ETS). An analysis of its impact for Romanian economy ant its effectiveness

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EUROPEAN UNION EMISSION TRADING SCHEME (ETS). AN ANALYSIS OF ITS IMPACT FOR ROMANIAN ECONOMY AND ITS EFFECTIVENESS

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The world is allegedly warming in a detrimental way because our industrial activity is increasingly emitting the putative culprit for the warming which is the carbon dioxide. The preferred way to deal with the issue is to force an emission reduction by, among others, imposing quotas, creating a sophisticated system of allowances, cap and trade and technology transfers. The European Union, as well as several member States had, at times, pledged various reductions which became law.

These pledges come at a cost to the industrial activity. Romania duly signed and ratified all the EU decisions taken after her accession but no clear bill was presented to the taxpayer. In the light of the Copenhagen accord and in preparation of the 2010 Mexican summit on the environment there's a need to know what are the modeled benefits of limiting the carbon dioxide emissions, and at what costs to the Romanian economy. This paper attempts to shed a light on those issues and to make it easier for the public to follow the intricate details of the trading scheme and its effects.

GENERAL FRAMEWORK

The United Nations Intergovernmental Panel on Climate Change (UNIPCC), since its inauguration in 1988, has the mission to evaluate the risk of climate change caused by human activity. It issued four reports in which it gathered all the available scientific facts and theories, publishing estimates of how the human activity is influencing the climate and how hot this will be because of human emissions of carbon dioxide.

The fourth report - The Fourth Assessment Report (AR4) - was published in 2007 and the fifth is scheduled for publication in 2014.

The AR4 predicts that for a doubling of the atmospheric Co2 contents as compared to the pre-industrialized times (from 288 ppm to 540 ppm, today 388 ppm), the absolute global average temperature will increase with 3.26 Kelvin until the end of the current century. The absolute global absolute temperature is generally considered to be 288 Kelvin, although it could change because the methodology and the measurements are under increased scrutiny, for various reasons including alleged fraud.

The Copenhagen Accord signatories agreed to take steps in order to limit the atmosphere warming in 2100 by no more than two degrees centigrade. The path chosen was the same defined previously, to reduce the anthropogenic greenhouse gases emissions. This essentially means carbon dioxide as well as other less emitted gases whose contribution to warming is calculated as carbon dioxide equivalent. Lately, the reference to carbon dioxide seems to decline, the simple carbon moniker being preferred.

THE ROMANIAN POSITION

By the end of January, as decided at the Copenhagen summit, all parties to the UN Framework Convention on Climate Change must report the emissions reductions they intend to implement by 2020. Romania signed the UNFCC protocol in 1992 at the Rio Earth Summit and subsequently ratified it in 1994. The Kyoto protocol was signed in 1999 and ratified in 2001.

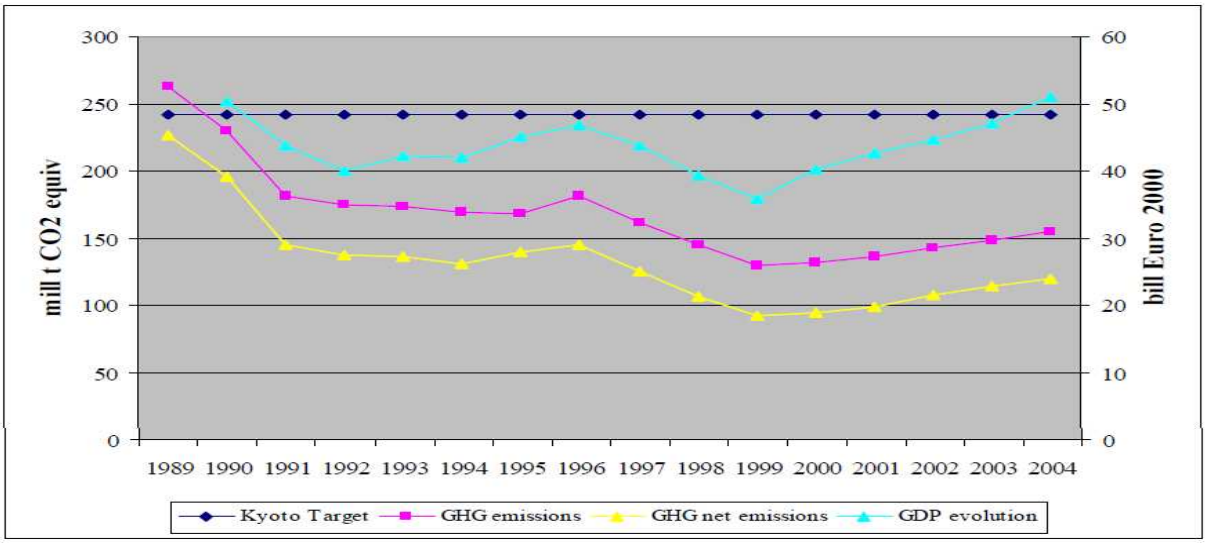

Fig. 1
Total GHG emissions versus Kyoto target

Romania was the first Annex I5 country which ratified the Kyoto Protocol to the UNFCCC, committing itself to reduce greenhouse gas (GHG) emissions by 8% compared to the base year of 1989, during the first commitment period 2008-2012. Yet 1989 was selected as base year since it expresses the best the direct connection between Romania's economic output and its GHG emissions (Decisions 9/CP2 and 11/CP4).

Table 1
GHG and GDP growth rates in the period 2003-2012[1]

	Unity	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
		Achievements			Forecast						
GDP	Bill Euro 2000	47.1	51.0	53.4	56.2	59.7	63.5	67.2	71.0	75.0	79.1
GDP growth rate	%	5.4	8.3	4.7	5.2	6.2	6.3	5.8	5.7	5.6	5.5
GHG emissions	Mill t CO_2	148.62	154.63	160.08	167.51	177.69	187.4	198.17	205.41	210.99	215.06
GHG growth rate	%	1.04	1.04	1.04	1.04	1.03	1.05	1.06	1.06	1.05	1.04

[1] Source: ROMANIAN NATIONAL ALLOCATION PLAN for the periods 2007 and 2008-2012

The UNFCCC Compliance Committee published the "Report of the centralized in-depth review of the fourth national communication of Romania" which has the Table 2 depicting the reductions effectively achieved.
"According to Romania's 2009 GHG inventory submission, total GHG emissions, excluding net removals from land use, land-use change and forestry (LULUCF), decreased by 44.8 per cent between the base year and 2007." [1]
In 1989, Romania released in total 243,538 (23.15 x 10.52) million Mg (t) Co2 equivalent.

Table 2
Indicators for GHG in Romania (1989-2006)[2]

	1989	1995	2000	2006	Change 1989–2000 (%)	Change 2000–2006 (%)	Change 1989–2006 (%)
Population (million)	23.15	22.68	22.44	21.59	–3.06	–3.80	–6.75
GDP (2000 USD billion using PPP)	166.36	141.03	132.28	187.88	–20.49	42.03	12.94
TPES (Mtoe)	69.44	46.47	36.31	40.15	–47.71	10.57	–42.18
GDP per capita (2000 USD thousand using PPP)	7.19	6.22	5.89	8.70	–17.97	47.64	21.11
TPES per capita (toe)	3.00	2.05	1.62	1.86	–46.06	14.94	–38.00
GHG emissions without LULUCF (Tg CO_2 eq)	276.05	180.77	135.52	152.29	–50.91	12.37	–44.83
GHG emissions with LULUCF (Tg CO_2 eq)	243.62	141.78	97.52	116.07	–59.97	19.01	–52.36
CO_2 emissions per capita (Mg)	8.35	5.71	4.25	5.14	–49.14	20.94	–38.49
CO_2 emissions per GDP unit (kg per 2000 USD using PPP)	1.16	0.92	0.72	0.59	–37.99	–18.09	–49.21
GHG emissions per capita (Mg CO_2 eq)	10.52	6.25	4.35	5.38	–58.70	23.72	–48.91
GHG emissions per GDP unit (kg CO_2 eq per 2000 USD using PPP)	1.66	1.28	1.02	0.81	–38.26	–20.88	–51.15

In 2006 the emissions were 115,7238 (21.51 x 5.38) million Mg (t) Co2 equivalent, a reduction of more than 50% compared with the base year. This decrease alone seems more than enough to cover the Kyoto and Copenhagen pledges.

While we can calculate the reduction in temperature (minor in fact) achieved due to the Romanian de-industrialization efforts, there is no official estimate available of the costs imposed on the Romanian economy. *Roughly, halving the emissions can be translated in halving the industrial output thus probably halving the wealth generation capacity of the Romanian economy.*

Although Romania is an Annex 1 signatory, her pledge is nowhere to be found in the final Copenhagen Accord. It is expected that a precise number will be issued by the new Government at the end of January 2010, as promised.

The emission reduction, while important, has little to do with active administrative measures targeting the greenhouse gases and more with the historical coincidence of turning off obsolete or otherwise unprofitable industries built during the Socialist era.

The new targets and ways of thinking imposed the institution of a new, market base system of limiting further carbon dioxide emissions. The EU's answer to this challenge is European Trade System or ETS.

[2] Sources: Romania's greenhouse inventory submission (2009) and International Energy Agency; Abbreviations:GDP= gross domestic product; LULUCF = land use, land-use change and forestry; PPP=purchasing power parity; TPES=total primary energy supply

ETS PAHSES OF IMPLEMENTATION

2005-2007: First trading period (and first round of NAPs). In December 2006, the Commission adopts legislative proposal to include aviation into the EU's emissions trading scheme (see LinksDossier Aviation and Emissions Trading).
2008-2012: Second trading period (coincides with period under which Kyoto commitments are to be achieved), with an EU-wide CO2 cap set at 2.08 billion tons.
23 Jan. 2008: Commission unveiled EU-ETS legislative proposal for post 2013 period of trading as part of a larger package on renewable energies and climate change.
3 April 2008: Data on industrial CO2 emissions in 2007 published, indicating a slight increase (EurActiv 03/04/08).
7 Oct. 2008: Parliament's environment committee voted on the EU ETS proposal (EurActiv 08/10/08).
17 Dec. 2008: Parliament approved, by overwhelming majority, the revised EU ETS for the third trading period 2013-2020 as part of the EU's climate and energy package (EurActiv 18/12/08).
31 Dec. 2009: Deadline for the publication of the Commission's list of sectors deemed to be exposed to a significant risk to carbon leakage.
By 30 June 2010: Commission will publish the absolute Community-wide quantity of allowances for 2013.
By Dec. 2010: Commission will publish an estimated amount of allowances to be auctioned.
2013: Revised scheme due to enter into force.
The market price of a carbon credit, equivalent with a ton of emitted carbon dioxide, had important fluctuations from the sought level of about 30 euros, going to approximate 11 euros at the end of December 2009.

EMISSION ALLOWANCES ISSUED BY THE ROMANIAN AUTHORITIES

The national cap (established in 2006) is 84.200.000 allowances that were allocated for the year 2007. 487.770.000 is the total for 5 years, resulting in 97.554.000 annually, allocated for the 2008 – 2012 period. The European Commission decided to centralize the national allocations of emissions from 2012, effectively ending the National Allocations Plans.

Allocation for new entrants shall be done for free from a set aside named the new entrants reserve (NER). For 2007, the NER shall comprise of 1.567.929 allowances, representing 1,86% and for the 2008– 2012 NER shall comprise a total of 39.428.365, representing 8,08% from the total amount of allowances to be allocated. CHP new entrants shall receive 99% of the amount of allowances, calculated based on the emissions of the installation (in order to balance the fact that older CHP plants receive a CHP bonus and promote the CHP technology), whereas all other installations shall receive 95%. Allowances from the NER not used within the 2007 period shall be cancelled. Allowances from the NER not used within the second period, at the end of third quarter of 2012 shall be auctioned. Allocation principle for the permits broken down in reserves for existing and new enterprises and for various industries

THE RECENT EVOLUTION OF CARBON CREDITS' PRICES

The first ETS stage had to be abandoned when the carbon credit price plummeted due to over allocation by the member States. The current stage has seen more stable prices but they also went down in synchronization with the economic downturn when we say reduced industrial production thus less activity and emissions. Additionally, cash impoverished companies started selling their allowance in order to mobilize more liquid resources.

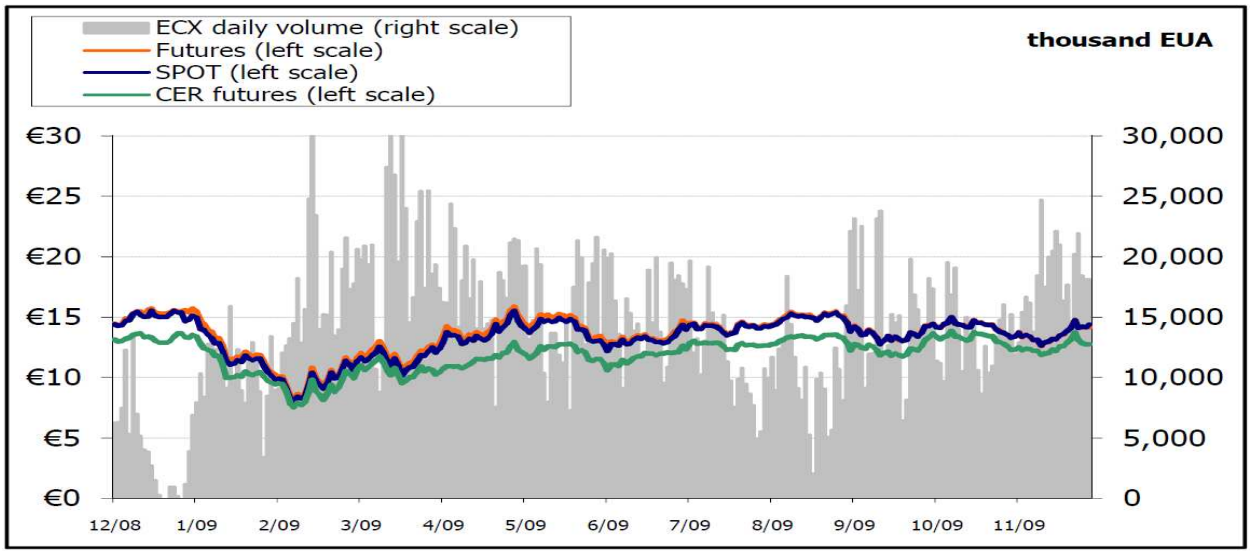

Fig.2
Price evolution of Carbon credits' prices (2008-2009)[3]

IMPACT

Currently, we consider the impact of the ETS to the Romanian economy to be minimal because the carbon permits were issued by the Romanian Government under the scenario of business as usual. This can be translated as only a nominal limitation when we keep in mind that the targets were reached anyway, without any new investments in green projects or any new limitation of the industrial activity.

Matter of fact, the price reduction that the carbon market experienced was caused exactly by this maneuver employed by practically all member states which intended to protect their own economies from forced scale down.

Because of this inflationary behavior, the European Commission decided to centralize the allocation of the carbon credits and to impose the limitations to the member states without their input. Romania was then asked to reduce its emissions with 20% but the base year was changed from 1990 to 2003.

The 2003 Romanian emissions were 148,62 million t Co2. The fifth part of it is 29,724 million t Co2. Under the business as usual scenario, Romania would then be forced to cover the deficit by buying the missing credits from the international market.

[3] Source: Carbon Warehouse, 2009; EUA=European Unit Allowance

At current price of about 15 euros per ton**,** *the financial effort of Romanian companies would be 445,86 million euros*. This additional cost would be partially absorbed and correspondingly reduce profits thus reduce taxes, entrepreneurial incentives, and investment capabilities. Another part would be transferred directly to the consumers mainly through energy price increase, pushing a bigger part of the society below the poverty line and forcing the State welfare to increase.

This assessment doesn't begin to evaluate the likely increase of the burden when stricter limitations will be imposed in the following years.

This reduction in national income could be seen as a valuable sacrifice given the dire predictions of the planetary meltdown a century down the road. Unfortunately, even if all the signatories of the Copenhagen Accord will correctly implement the pledges, *the temperature reduction in one hundred years' time will be 0,2 Kelvin*, a paltry amount ten times smaller than the declared target, according to an analysis of the Science and Public Policy Institute. The Romanian contribution to this temperature reduction is likely to be rather minor, in line with its economy weight in the European Union.

CONCLUSION

The international accords that Romania signed are imposing drastic cuts of the industrial activity along with diverting important cash resources all in the name of reducing the absolute global mean temperature with 0,2 degrees over one hundred years, a change smaller than the current measurement error (which makes it undetectable).

The Romanian Government would be well advised to fight these limitations and to make sure that the Romanian economy is allowed to grow as fast as possible.

There are positive signs as Romania and other Eastern Europe countries attacked the Commission directive of reducing the emission with 20% and won the case at the European Court of First Instance in September 2009.

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