ROMANIAN NATIONAL ALLOCATION PLAN

for 2007 and 2008-2012 periods

ANNEXES

Ministry of Environment and Water Management

December 12, 2006

The present document is an integral part of the 1st Working Document on the Romanian NAP (separate document). See the main document for information on the consultation procedure.

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ANNEX A METHODOLOGY FOR ESTABLISHING THE TOTAL AMOUNT OF ALLOWANCES – THE NATIONAL CAP

This Annex presents the methodology for establishing the total amount of allowances allocated to the installations under the EU-ETS (national *cap*).

A.1. Overview

The used method for top – down projections is based on historical achievements and the forecast of macro-economic and sector specific indicators which are proposed in the Governmental strategy and in the policies related to Romania's socio-economic development.

The undertaken steps for establishing the total amount of allowances were:

1. Determination of the historical national emissions and the breakdown to ETS and non-ETS sectors using the top down approach;
2. Development of the projected emissions in the ETS and non ETS sectors, considering the trends of GDP growth and carbon intensity;
3. Establishment the total cap for ETS installations;
4. Comparison of the calculated cap with the indicative cap.

A.2 Step 1: Historical emissions

In order to estimate Romania's future GHG emissions for 2007 and for the second phase, an analysis of data provided in the National Inventory Report (NIR) was done. This document was developed in 2006 by the National Research and Development Institute for Environmental Protection, for the period 1989-2004 and submitted by MEWM to the UNFCC Secretariat and Environmental European Agency; it contains the National Inventory Report (NIR) and the CRF`s tables.

The CRF`s tables contain the figures for anthropogenic emissions of direct greenhouse gases CO_2, CH_4, N_2O, HFC, PFC, SF_6 as well as indirect greenhouse gases: NO_x, CO, NMVOC and SO_2.

The GHG emissions resulted from each sector were converted into CO_2 equivalent according to the Global Warming Potential provided in IPCC guidelines; the sectors listed in the Inventory are: energy, industrial process, solvent and other product use, agriculture, waste, LULUCF and others. Based on the emissions generated by the sectors above-mentioned were calculated the emissions covered by the EU ETS. As those are the available data with the highest accuracy, were developed the CO_2 emissions for the categories of activities covered by the scheme; 2003 year being considerated as base year, the projections were developed for the period between 2006 and 2012.

A.3 Step 2. Projected emissions

A.3.1 Approach

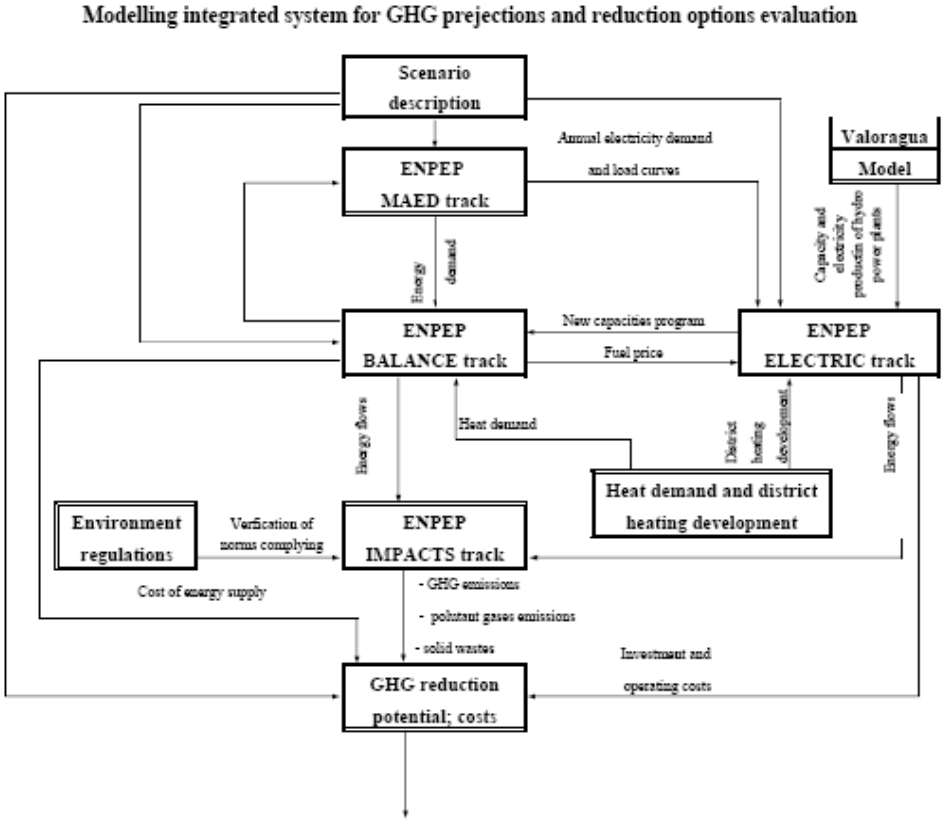
The GHG emissions has been determined for energy sector and non – energy sectors of the national economy.

The emissions generated by the energy sector have an important share of emissions in the total GHG emissions of the country. In respect of the previous statement, in the energy sector the following sub – sectors were analyzed:

- Energy supply
- Energy conversion processes – refinery of petroleum products, coke production, electricity and heat production
- Energy consumers

GHG emissions projections till 2012 for the energy sector are based on calculations with the ENPEP (Energy and Power Evaluation Program) software, developed by Argonne National Laboratory of US Department of Energy (DOE) and distributed by International Atomic Energy Agency (IAEA). The main models used are MAED (Model for Analyses of Energy Demand), WASP (Wiener Automatic Simulation Program), BALANCE and IMPACTS, presented in figure 1.

Figure 1. Integrated system for modeling for GHG forecast and reduction option evaluation

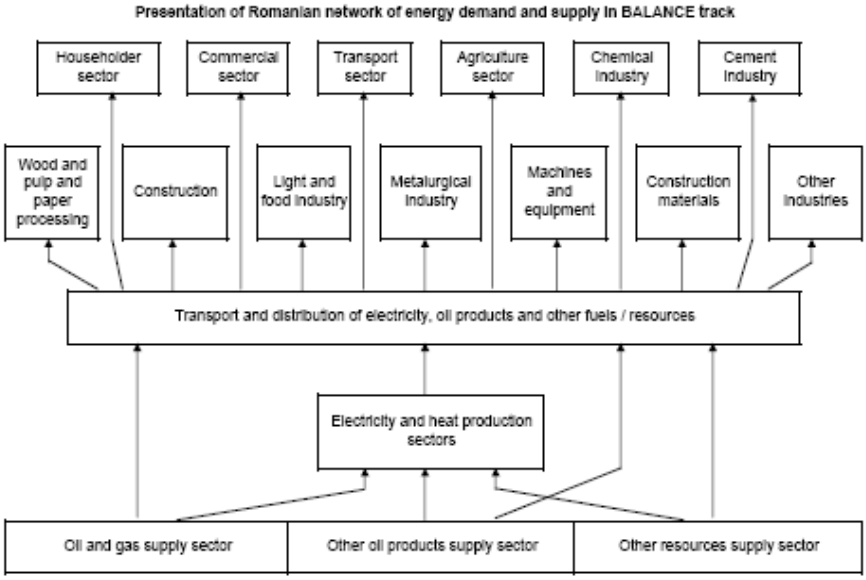


The use of the mentioned software imposed the necessity of preparing an energy balance at national level. The entire fosil and non fosil fuels flow from extraction to the end consumer was analysed.

In figure 2 there is a simplified energy balance created for the analysis performed for the NAP. The balance consists in four major elements:

- primary energy resources
- energy conversion technologies
- energy resources transport and distribution
- energy consumers

Figure 2. Simplified diagram for the energy network



The primary energy resources produced and used in Romania are: coal, oil, natural gas, the renewable energy sources (hydro, biomass) and uranium.

Romania makes also imports of coal, oil and natural gas, as primary energy resources.

Energy consumers are classified according to IPCC guidance. Each sector was modeled at detailed level, considering the technological processes and the IPCC emissions factors.

Emissions resulted from conversion processes were determined using IMPACTS program.

Regarding non–energy sectors, the following activities were analyzed:

- agriculture- CH_4 emissions from enteric fermentation and manure management and N_2O emissions using natural and chemical fertilizers;
- industry – emissions resulting from industrial processes;
- forestry – atmospheric carbon sequestration options;
- solvents and other products – emissions have been determined in correlation with the economic and technological evolution ;
- waste – the management options for liquid and solid waste.

The projections of GHG emissions for industrial sectors are based on production forecasts made for various industrial sectors, taking into consideration the industrial restructuring imposed by economical development and EU requirements and the emissions factors in correlation with IPCC requirements.

A.3.2 Assumptions

A reference scenario (business as usual), was elaborated in order to estimate the GHG emissions. Romanian macro economic and energy indicators for the period 2006-2012 used in the reference scenario are in accordance with the document contained in the chapter 1.2.6 and presented in the following table:

Table A1. Macroeconomic and energy indicators for 2003 – 2012 periods

	MU	Achievement			Forecast						
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Population	10^6 inhabitant	21.73	21.67	21.62	21.55	21.47	21.38	21.32	21.26	21.20	21.14
GDP	10^9 EURO 2000	47.10	51.00	53.40	56.20	59.70	63.50	67.20	71.00	75.00	79.10
GDP/ inhabitant	Euro2000 / inhabitant	2.17	2.35	2.47	2.61	2.79	2.97	3.16	3.34	3.54	3.70
GDP growth rate	%	5.40	8.30	4.70	5.20	6.20	6.30	5.80	5.70	5.60	5.50
Energy intensity	tep/ 10^3Euro 2000	0.66	0.66	0.67	0.65	0.63	0.61	0.59	0.58	0.55	0.53

Source: ¨Projection of main macroeconomic indicators during 2006 – 2010 preliminary version of the Spring Forecast elaborated by the National Forecasts Commission, 31.03.2006

During the period 1990-2000 the contribution of the services sector in total added value increased continuously. The total contribution from the industry, agriculture and energy sector to total value added in the year 2000 equaled 43.8%, which is significantly lower than the 67.8% share reported in 1990.

The macroeconomic structure of the Romanian economy is still quite different from the structure of the EU countries. Under these conditions the Romanian macro-economic policies on short-term consists of:

- the selective economic restructuring;
- the modernization and development of infrastructure;
- development of industrial sectors with competitive potential;
- the development of the agriculture sector in accordance with the natural, economical and human potential of Romania;
- the support of IT activities;
- the development of tourism;
- the diversification of services sector.

In the period 2001-2004 the average rate of added value was 5.8% for industry, 4.2% for agriculture, 7.0% for construction, 4.6% for services. Industrial and agricultural production lead to the increase in activities from transport sector with an average rate of 5.2%.

The following assumptions were made regarding the macroeconomic development of Romania after 2006:

- finalizing the structural changes started in 2000;
- evolution of macroeconomic structure with similar trends as EU trends;
- economic growth and substantial investments to achieve important changes in the macroeconomic structure

Taking into consideration these conditions, the energy demand for the 2006-2012 period presented in the table A2 was determined:

Table A2. Primary energy and electricity demand

	MU	Achievements			Forecast						
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Primary energy demand	10^9 tep	39.03	39.02	41.36	42.27	43.56	45.0	46.2	47.65	48.1	48.8
Total primary energy demand/ inhabitant	tep/ inhabitant	1.80	1.80	1.90	1.96	2.03	2.10	2.10	2.21	2.27	2.31
Electricity demand	TWh	54.56	55.30	56.48	58.99	60.5	61.3	62.9	64.3	65.99	67.72
Electricity demand/ inhabitant	kWh/ inhabitant	2.51	2.55	2.61	2.74	2.81	2.86	2.95	3.02	3.11	3.21

Source: Primary energy consumption: Romanian Energy Policy for 2006 – 2009, discussions document
Electricity consumption: Ministry of Economy and Commerce

The forecasted evolution of total demand of primary energy in the period 2006-2012 is to be achieved with an annual average growth rate of about 2.5%.

The estimated evolution of the electricity demand in the period 2006-2012 is to be achieved with an annual average growth rate of about 2.5%.

The evolution of the domestic primary resources output for the period 2006-2012 are presented in Table A3:

Table A3. Evolution of the internal primary energy production

	MU	Achievement 2005	Forecast						
			2006	2007	2008	2009	2010	2011	2012
Total coal out of which:	10^6 toe	6.55	7.70	8.03	7.82	8.15	8.44	8.80	9.10
lignite	10^6 toe	4.82	5.77	6.04	5.84	6.08	6.30	6.32	6.36
hard coal	10^6 toe	1.7	1.93	1.99	1.98	2.07	2.14	2.48	2.74
Natural gas	10^6 toe	5.37	6.07	7.30	8.83	9.71	10.20	10.52	11.13
Fuel oil	10^6 toe	1.87	1.43	1.40	1.30	1.10	1.04	0.96	0.83
Hydro energy	10^6 toe	1.74	1.38	1.38	1.38	1.38	1.38	1.38	1.38
Nuclear energy	10^6 toe	1.43	1.43	1.43	2.86	2.86	2.86	2.86	2.86
Other fuel	10^6 toe	2.90	2.92	2.97	3.10	3.20	3.3	3.4	3.5
TOTAL	10^6 toe	19.86	20.93	2.51	25.29	26.40	27.22	27.92	28.80

In the period 2008 – 2012 the total nuclear energy production will double compared with 2006. This is the result of commissioning the second unit of the Cernavoda nuclear power plant.

Table A4 presents the evolution of electricity production necessary in order to cover the demand:

Table A4. The evolution of electricity production [TWh/year]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Electricity production for domestic market	54.56	55.30	56.48	58.99	60.50	61.30	62.90	64.30	65.99	67.72
Electricity exports	2.08	1.18	2.90	2.00	2.00	3.00	3.00	3.30	3.30	3.30
Total electricity production	56.64	56.48	59.39	60.99	62.5	64.30	65.90	67.60	69.29	71.02
Nuclear energy	13.57	16.83	20.21	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Hydro +renewable energy	4.90	5.55	5.52	5.50	5.50	11.00	11.00	11.00	11.00	11.00
Thermal Power Plants production	38.17	34.10	33.66	39.49	41.00	37.30	38.90	40.60	42.29	44.02
of which:	23.34	21.47	21.26	27.34	29.00	26.30	27.90	29.60	31.29	33.02
Coal	11.19	10.46	10.19	10.00	10.00	9.50	9.50	9.50	9.50	9.50
Natural gas	3.63	2.17	2.19	2.15	2.00	1.50	1.50	1.50	1.50	1.50

Source: Ministry of Economy and Commerce

Figure 3. Electricity production by power plants type, in the period 2003 - 2012

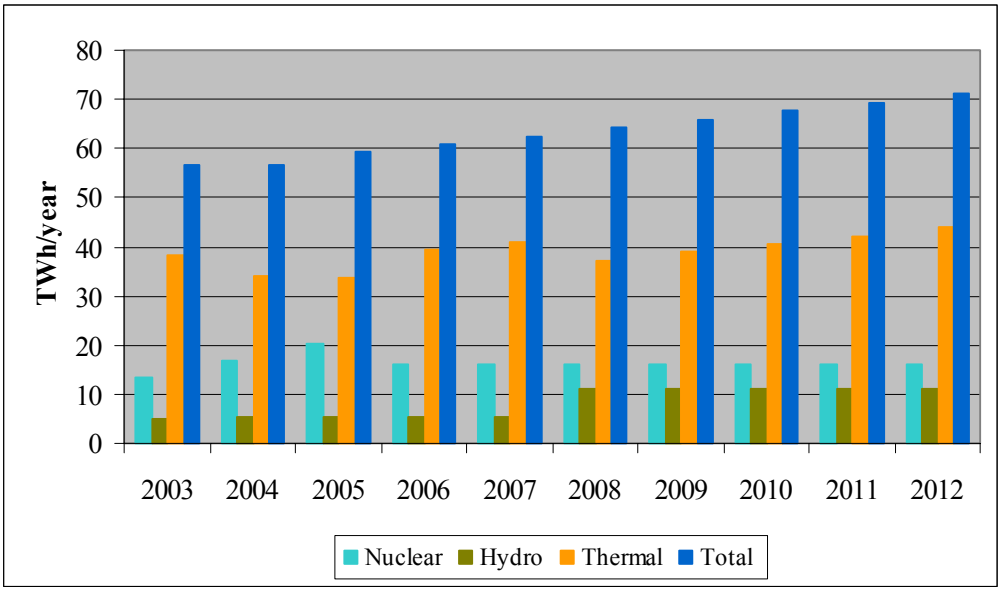
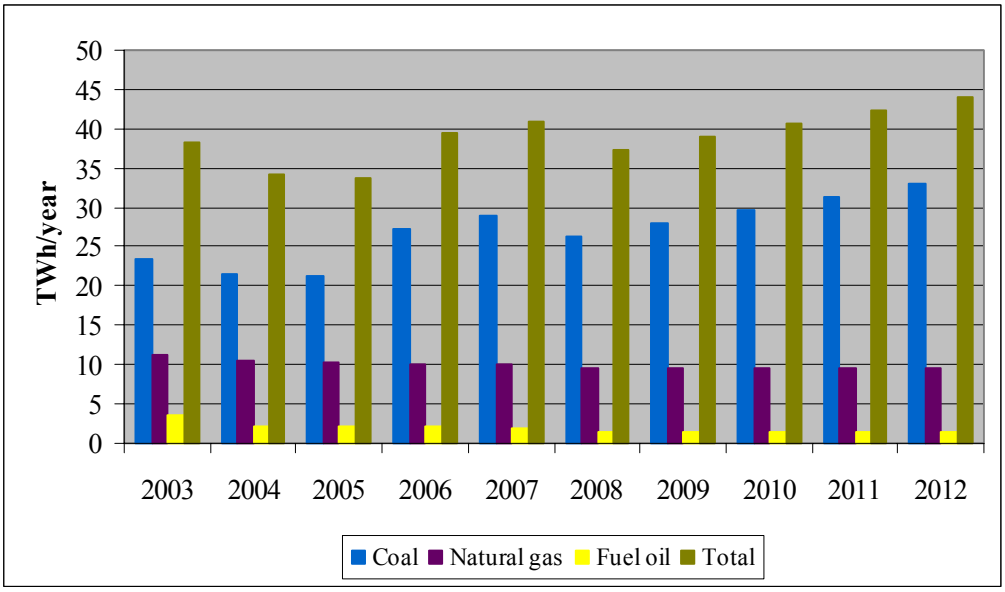


Figure 4. Fossil fuel electricity production – by fuel type, in the period 2003 - 2012



During 2006-2012 a total of 2100 MW (obsolete value) low performance generating units will be retired. During this period, a total of 1100 MW will be commissioned and a total of 950 MW installed capacity will be rehabilitated. In the same period rehabilitation of thermal plants and heat transportation and distribution networks will be performed in order to reduce heat loses and to increase efficiency.

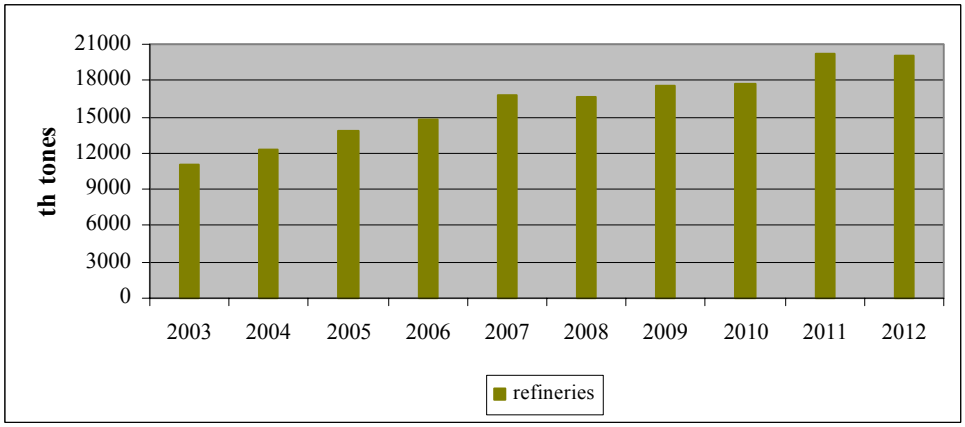
Table A5 and figure 5 presents the evolution of the refinery sector.

Tabel A1. Production of refinery sector under EU ETS Directive [10^3 tons]

Sector	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Refineries	11000	12289	13844	14840	16750	16580	17570	17800	20270	20100

Source: Ministry of Economy and Commerce

Figure 5. Production of refinery sector under EU ETS Directive



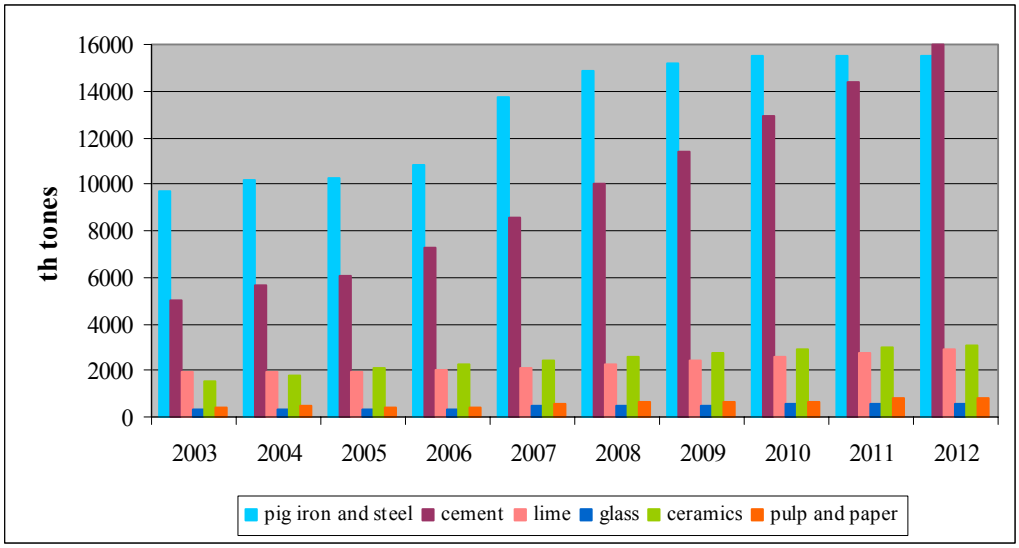
The forecasted production for industrial sectors under EU ETS, namely mineral sector (cement, lime, glass and ceramics products), metal sector (iron, steel, etc), pulp and paper sector, related to their development, are presented in table A6:

Table A6. Production of industrial sectors under EU ETS Directive [10^3 tons]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Ferrous metals										
Coke	1550	1573	1777	1900	2100	2250	2320	2360	2360	2360
Cast iron	4101	4244	4098	4500	5800	6230	6400	6510	6510	6510
Steel, out of which	5578	5920	6175	6300	7960	8600	8800	9000	9000	9000
Steel convertor	4543	4676	4509	4600	5350	5745	5900	6000	6000	6000
Electric steel	1035	1244	1666	1700	2610	2885	2900	3000	3000	3000
Cement	5002	5624	6021	7280	8600	10000	11400	12900	14400	16000
Lime	1936	1978	1978	2000	2100	2250	2400	2560	2730	2900
Glass	314	315	320	350	480	500	520	540	570	600
Ceramics	1503	1787	2112	2300	2400	2600	2750	2900	3000	3100
Pulp and paper	444	454	371	435	552	640	670	680	795	800

Source: Ministry of Economy and Commerce

Figure 6. Industrial production os sectors included in the EU ETS, in the period 2003 - 2012



In the following period, 2007-2012, a fast replacement of old technologies for the most important industrial sectors is not expected. It is expected that during this period the majority of sectors will try to use existing capacities, with some rehabilitations for increasing their production and efficiency.

In recent years various industries that had a very small production until 2005 have been privatized. Larger companies took or are in the process of taking over important production units. These units have been, respectively are expected to significantly increase their production.

The Romanian strategy aiming for complying to the European standards and to reduce the gaps comparative to the other EU countries has in view large infrastructure projects which to be followed by significant increases of the industrial production and construction materials especially (stell, pig iron, cement, lime, etc).

A.3.3. GHG projections for ETS and non ETS sectors

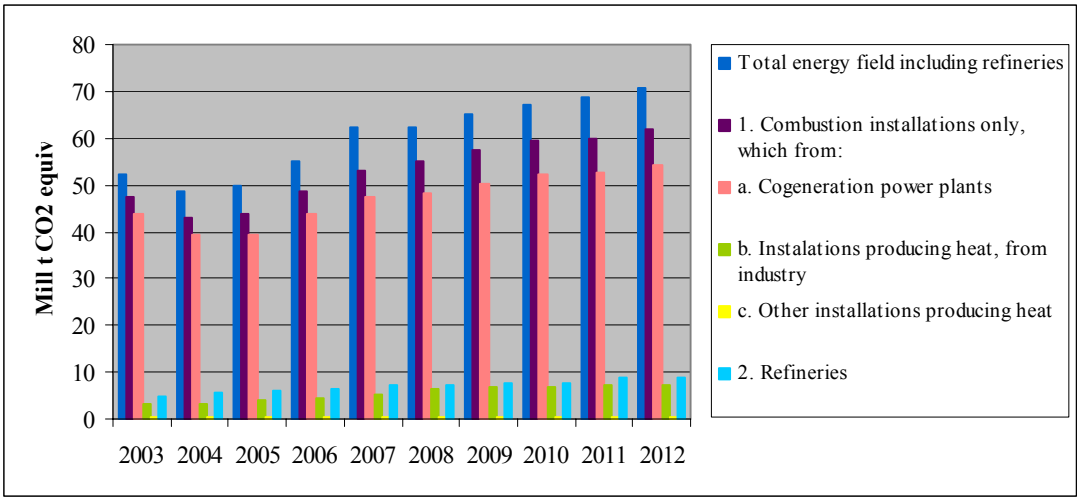
The Energy activities sector is split up in electricity and/or heat plants, refineries and coke plants. Emissions projections estimated for these sectors, for the period 2006-2012 period take into consideration both the projections of electricity and heat demand as well as the projections of refineries and coke plants production. Projected emissions are calculated on the basis of IPCC emission factors.

Table A7 presents the evolution of CO_2 emissions for energy activities sector, respectively combustion installation and refineries; combustion installations are structured on: electricity and heat production, electricity and heat production in industry and heat production in sectors likely residencial, comercial, etc.

Table A7. CO2 emissions from energy activities sector [10^6 tons CO_2]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total CO2 emissions for energy sector, including refineries	52.18	48.71	50.05	55.22	62.27	62.16	65.08	67.15	68.80	70.66
1. Combustion installations, out of which	47.26	43.04	43.96	48.69	52.97	54.98	57.46	59.49	6007	62.00
a. electricity and heat production installations	43.91	39.49	39.56	43.95	47.45	48.34	50.44	52.20	52.53	54.26
b. heat production installations in industry	3.05	3.24	4.09	4.43	5.20	6.32	6.70	6.96	7.20	7.40
c. orther heat production installations in the residential, commercial etc; sector	0.30	0.31	0.31	0.31	0.31	0.32	0.33	0.33	0.33	0.34
2. Refineries	4.92	5.67	6.09	6.53	7.30	7.18	7.62	7.66	8.72	8.66

Figure7. CO_2 emissions from energy activities sector



The evolution of GHG emissions considering the sectors' structure, according to the National Inventory Report and the evolution of the GHG emissions for the EU ETS sectors, is presented in the following table:

Table A8. GHG and CO2 emissions evolution for ETS and non ETS sectors [10^6 tons CO_2]

		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Energy generation	GHG	63.13	59.46	62.06	66.40	73.10	75.40	82.20	84.94	88.48	90.70
	CO_2 in ETS	51.88	48.40	49.74	54.91	59.95	61.84	64.76	66.82	68.45	70.32
Transport	GHG	12.27	17.04	17.23	17.50	18.00	18.80	19.20	20.64	21.00	21.50
Commercial, residential and agriculture energy use	GHG	11.48	12.13	12.50	12.80	13.40	14.50	15.00	15.30	15.70	16.00
	CO_2 in ETS	0.30	0.31	0.31	0.31	0.32	0.32	0.33	0.33	0.34	0.35
Industrial processes	GHG	17.35	18.57	20.00	21.46	22.60	25.30	26.80	28.30	28.90	29.40
	CO_2 in ETS	9.27	9.93	10.35	11.43	12.87	15.69	16.74	17.75	18.56	19.43
Agriculture	GHG	11.95	13.93	14.11	14.53	14.80	15.10	15.50	16.10	16.40	16.60
LUCF	GHG	-34.80	-34.67	-34.80	-34.90	-35.00	-35.20	-35.30	-35.40	-35.50	-35.60
Waste	GHG	8.19	8.43	8.51	8.62	8.70	8.80	8.87	9.13	9.21	9.26
All other sector	GHG	24.26	25.06	25.67	26.19	27.00	29.50	30.60	31.00	31.30	31.60
Industrial combustion processes	CO_2 in ETS	9.52	10.16	10.22	11.04	11.05	11.93	12.69	13.37	13.72	14.05
Total	GHG	148.63	154.62	160.08	167.50	177.60	187.40	198.17	205.41	210.99	215.06
Total in ETS	CO_2 in ETS	70.97	68.80	70.62	77.70	84.20	89.78	94.50	98.27	101.07	104.15

Table 9 presents the CO_2 emissions evolution for industrial sectors taking into consideration both the technological processes and combustion installations.

Table A9. Recent and projected emissions in sectors covered by the EU ETS [10^6 tons CO_2]

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Combustion installations	47.26	43.04	43.96	48.69	52.97	54.98	57.46	59.49	60.07	62.00
Refineries	4.92	5.67	6.09	6.53	7.30	7.18	7.62	7.66	8.72	8.66
Metal ore roasting, sintering,pig iron, steel production installations	11.84	12.37	12.33	12.85	13.10	15.05	15.51	15.98	15.99	15.98
Cement production installations	5.15	5.90	6.15	7.30	8.06	9.58	10.71	11.88	13.00	14.16
Lime production installations	0.65	0.75	0.88	1.00	1.29	1.38	1.50	1.52	1.54	1.57
Glass and glass fibre prod. Inst.	0.38	0.33	0.36	0.39	0.46	0.47	0.49	0.50	0.50	0.51
Ceramics production installations	0.30	0.35	0.42	0.49	0.51	0.55	0.55	0.56	0.56	0.57
Pulp, paper and board production installations	0.47	0.39	0.43	0.45	0.51	0.59	0.66	0.68	0.69	0.70
Total industrial processes	18.79	20.09	20.57	22.48	23.93	27.62	29.42	31.12	32.28	33.49
Total CO_2	70.97	68.80	70.62	77.70	84.20	89.78	94.50	98.27	101.07	104.15

A.3.4 Carbon intensity evolution

Carbon intensity, GDP and total GHG emissions developments in the period 2003-2012 are presented in table A10. Based on the simulations performed, one can note that the carbon intensity decreased from 103.7 % in 2000 to 86.18 %

Table A10. Evolution of carbon intensity in the period 2003-2012

		MU	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Real GDP	Abs.	bil.Euro 2000	40.3	42.6	44.7	47.1	51.0	53.4	56.2	59.7	63.5	67.9	71.0	75.0	79.1
	Trend 2003= 100	%	85.56	90.45	94.9	100.0	108.25	113.38	119.32	126.75	134.82	142.68	150.74	159.24	167.94
Emissions	Abs.	$MtCO_2$	131.85	136.57	142.68	148.62	154.63	160.08	167.5	177.6	187.4	198.17	205.4	210.99	215.06
	Trend 2003= 100	%	88.72	91.89	96.0	100.0	104.04	107.71	112.7	119.5	126.09	133.34	138.21	141.97	144.70
Carbon intensity	Abs.	$MtCO_2$ /bil. Euro 2000	3.272	3.206	3.192	3.155	3.032	2.998	2.98	2.975	2.951	2.949	2.893	2.813	2.719
	Trend 2003= 100	%	103.7	101.61	101.17	100.0	96.10	95.02	94.47	94.29	93.54	93.47	91.7	89.17	86.18

The carbon intensity decreasing rate is relatively low due to the expected increase of coal use for heat production and industrial processes. The reason for increasing the use of coal is its price and availability of natural gas on the international market; also it should be mentioned the Governmental policy related to increasing the security of energy supply and use of local energy resources.

A.4 Step 3. Determination of total amount of allowances

The top-down projections represent the main source of data when establishing the total amount of allowances. The bottom-up exercise related to data collection from installations/operators (through questionnaires) was performed in order to obtain a complete and corect image on the emissions covered by EU ETS (see section C.2 for details on data collection from questionnaires).

The total cap determined for 2007 period and 2008 – 2012 period is presented in the table below:

Total cap [no. of allowances]	**2007**	**2008 – 2012**
	84,200,000	97,554,000 annual average

A.5 Step 4. Comparison with indicative cap

The Indicative cap is determined considering the CO_2 emissions generated by the installations under the Directive, GDP growth rate (for 2003 – 2007 and 2003 – 2010) and reduction in carbon intensity for the same periods.

Therefore in the analyzed periods the following formulas are used:

1. the indicative cap for 2007:

$$IC_{2007} = E_{ET\,2003}(1+r_{PIB})^4(1+r_{IC})^4, \text{where:}$$

2. the indicative cap for 2008 - 2012:

$$IC_{2008-2012} = E_{ET\,2003}(1+r_{PIB})^7(1+r_{IC})^7,$$

IC = indicative cap
E_{ET} = CO_2 emissions generated by the sectors under the ETS in 2003
r_{PIB} = GDP growth rate of the indicated period
r_{IC} = carbon intensity for the indicated period
IC = carbon intensity calculated as total GHG emissions divided by 1000 Euro GDP

For Romania, the figures are as follows:

Table A51. Indicative cap

Emission trading sector in 2003	70.963 Mtons
Average GDP growth rate for 2003-2007	6.1%
Average reduction of carbon intensity 2003-2007	1.48%
Average GDP growth rate for 2003-2010	6%
Average reduction in carbon intensity 2003-2010	1.25%
Cap 2007	84.7 Mton
Cap 2012	98.0 Mton

A.5.1 Analysis

The preliminary assessment of the available hystorical data and the expected developments in Romania leads to the following conclusions:

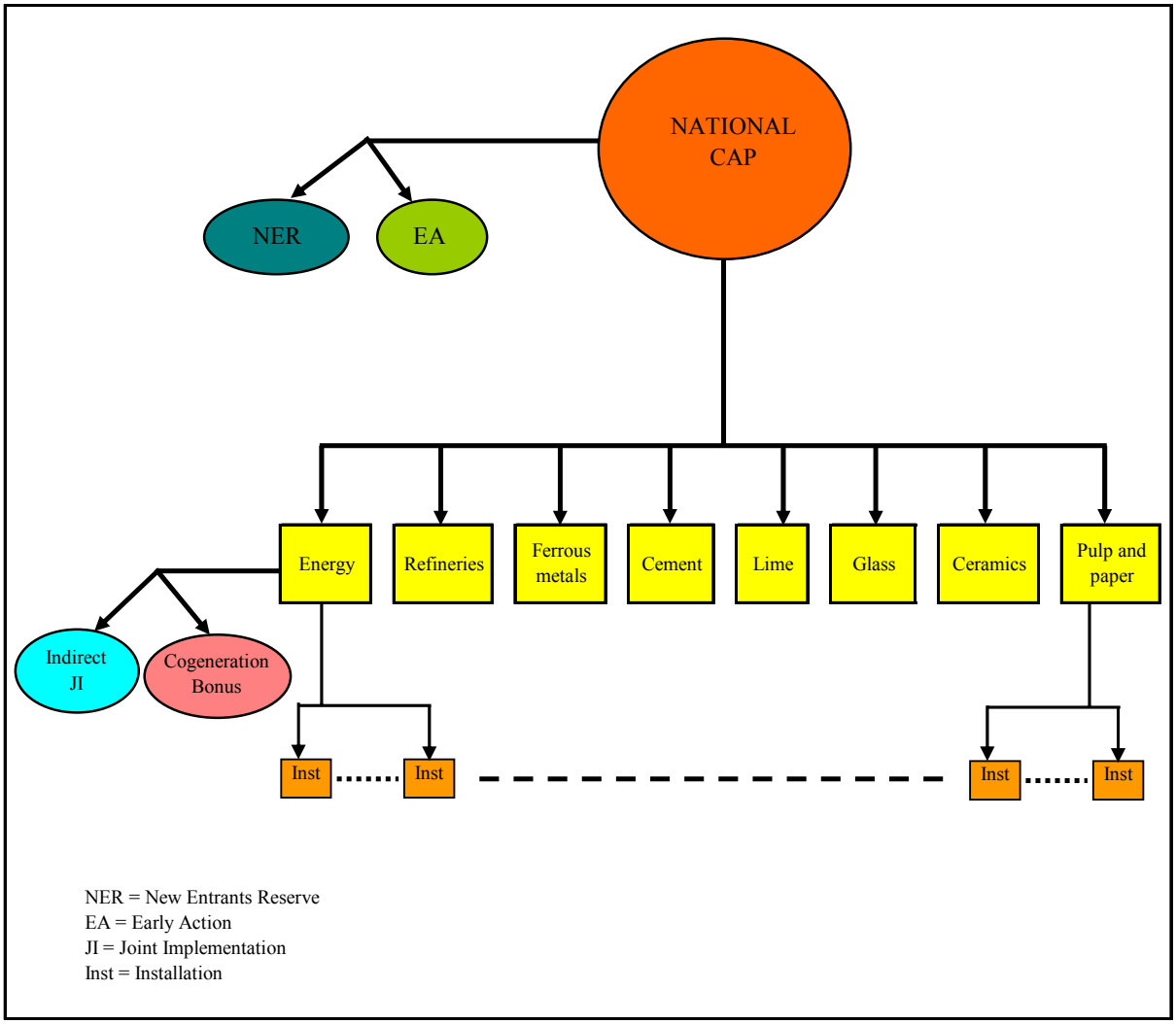
- The average annual GDP growth in 2003 of 6.02%
- The expected growth factor for 2005-2010 is 5.8%
- The economic growth of 5.8% is much higher than the indicative figures in the 2nd Guidance.
- The year 2000 is not a representative reference year for the trend of GHG emissions as the whole country, at that date went through a very deep economic restructuring process which began early after 1990 and lasted until 2003.

Therefore, the year 2003 is the most appropriate one for Romania to reveal the upward trend in terms of GDP and downward trend in terms reduction in carbon intensity

ANNEX B - ALLOCATION METHODOLOGY AT THE SECTOR LEVEL

B.1 Two step approach

Figure 8. Allocation mechanism



Romania chose to use a two-step approach to allocate the allowances at the installation level. First, the overall national cap is established and the amount of allowances allocated for the early actions bonus and the new entrants reserve is subtracted. Then the remaining allowances are allocated to sectors. In the second step, the allowances are distributed to each installation within the sector.

This approach is the most suitable for Romania, since historical and projected growth rates of the production do differ among the sectors covered by EU ETS. Data availability and reliability were also considered for the breakdown of these sectors.

The same methodology is applied for 2007 and for the period 2008 – 2012.

B.2 Establishing the total amount of allowances to be distributed to the sectors

The following formula has been applied when determining the amount of allowances to be distributed to the eight sectors, referred to here as TotalSector:

$$TotalSector = PN - EA - NER$$

where:

PN:	total amount of allowances to be allocated
EA:	total amount of allowances allocated to award early actions
NER:	New Entrants Reserve

The calculation of the reserves for new entrants and early actions can be found in **Annex D** and **Annex F**.

This methodology is applied for the year 2007, as well as for the period 2008-2012.

B.3 Methodology of allocating the allowances to the eight sectors

Sector caps are determined based on the share of the emissions of each sector in the total emissions generated by activities under EU ETS. The share of each sector is determined as ratio between sector projected emissions for 2007, respectively 2008 – 2012 period and total emissions of activities covered by EU ETS in the same period. The share in these calculated projected emissions equals the share of allowances the sector receives from the total amount of allowances to be allocated after subtracting the reserves for new entrants and early actions.

Allocation methodology at the sector level is based on:

1. the breakdown by sectors;
2. determining emissions of the sectors;
3. determining the share of each sector in the total EU ETS emissions;
4. correcting allocation for the energy sector[1] .

B.3.1 Step 1: Sector breakdown

The following 8 sectors have been distinguished:

1. Energy
2. Refineries
3. Production and processing of ferrous metal
4. Cement
5. Lime
6. Glass
7. Ceramics
8. Pulp and Paper.

This sector breakdown is determined on the basis of the historical/projected production and growth rates of emissions covered by scheme.

The energy sector includes also the installations of other sectors and activities which are considered under EU ETS only because they are combustion installations larger than 20 MW.

[1] From Energy sector cap it is extracted the reserve for the cogeneration bonus and indirect JI reserve.

B.3.2 Step 2: Determining sector emissions

The historic emissions of the sectors are determined based on the data from the latest National inventory of the greenhouse gases emissions, being available until 2004.

The growth factor of sector emissions is related to the following factors:

1. the production of the sector, GDP growth;
2. the trend in carbon intensity.

The carbon intensity at the sector level is related to:

1. increase in energy efficiency;
2. fuel switching;
3. changes in production structure.

B.3.3 Step 3: The share of each sector in the total EU ETS emissions

For the year 2007, the share of a sector is determined as ratio between projected emissions of that sector for year 2007 (top-down) and total emissions of activities covered by EU ETS in the period.

For the second period, share of a sector is determined as the average of the shares of each sector in the period 2008 – 2012. The share of a sector is determined as ratio between sector projected emissions for period 2008 - 2012 (top-down) and total emissions of activities covered by EU ETS in the period.

B.3.4 Step 4: Correcting the allocation for the energy sector

The sector allocation for the **energy activities** is decreased with:

- the reserve for the cogeneration bonus, because the installations within the energy sector benefit from this bonus;
- the indirect JI reserve corresponds to the indirect emission reductions resulted from the JI projects which have effect on the emission reductions from the national grid (it has been taken into account only for 2008-2012 period).

For more information on the CHP bonus and the JI reserve, see **Annex E** and **F**.

B.4 Results of the allocation at the sector level

The table below lists the proposed allocation at sector level:

Table B 1. Proposed allocation

Sector	Allocation (no. allowances)	
	2007	**2008-2012**
Energy	51,761,060	262,287,215
Refineries	6,841,498	34,871,105
Production and processing of ferrous metals	13,800,522	79,771,610
Cement	7,611,289	51,691,565
Lime	1,198,461	6,516,710
Glass	427,014	2,141,815
Ceramics	477,566	2,427,225
Pulp and paper	514,661	3,041,890

ANNEX C - ALLOCATION METHODOLOGY AT THE INSTALLATION LEVEL

C.1 Approach

Having established the sector caps for the above-mentioned sectors, the allowances are distributed to the installations within the sector. This Annex presents the used methodology when allocating at the installation level.

The used methodology is based on the historical approach, by which the amount of allowances is established on the basis of the share of the installation emissions from the relevant year in the relevant emissions of the sector.

This methodology is based on the assumption that the share of emissions of an existing installation within a sector shall not change in the future.

The undertaken steps are:

1. determination of the share of the emissions of the installation in the total emissions of the sector on the relevant year;
2. for period 2007 and for period 2008-2012, the amount of allowances allocated to each installation is a direct result of the share of emissions in the relevant year determined under step 1.

The methodology is applied for the period 2007 and for the period 2008-2012.

C2 Step 1: Determination of emissions of installations

C2.1 Determination of the historical reference period

A historical period (**reference period**) was considered to take into consideration the fluctuations in the activity of the installations. In the reference period, for each installation, a **relevant year** was calculated as the average between two years with highest emissions.

The reference period is 2001-2004 and the decision for this period was based on the following:

- the 2004 is the most recent year for which data are available at the national level, so it possible to have a very real image of the GHG emissions including those generated by the installations covered by the scheme. Moreover being the last National Inventory (submitted by Romania in 2006) can provide the necessary accuracy and certainty of the data;
- the four-year period was consider in order to account for fluctuations in installations' activity, a period was deemed to be necessary and sufficient.

C2.2 Identification of installation

In April 2006, the process of identification of the installations and data collection was started with the help of the Local Environmental Agencies, ministries, chamber of commerce and industries and branch organizations.

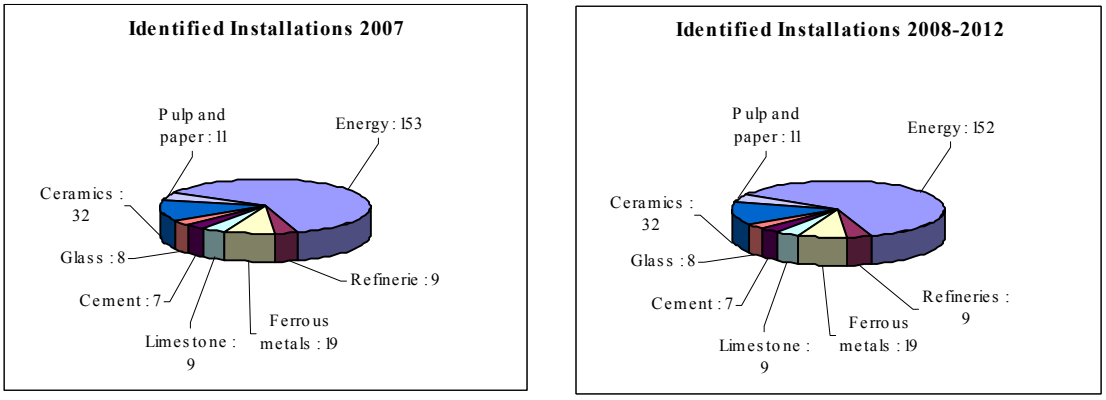
Identified installations, including those resulted after the public consultation process, are:

Table C1. Identified installations per sectors

	2007	2008-2012
Energy	153*	152*
Refineries	9	9
Production and processing of ferrous	19	19
Cement	9	9
Lime	7	7
Glass	8	8
Ceramics	32**	32**
Pulp and paper	11	11
Total ETS	248	247

*) Includes 4 installations operating 100 % on biomass, with zero emissions, which are monitored
**) Includes 1 installation operating 100 % on biomass, with zero emissions, which is monitored

Figure 9. Identified installations



Identified installations that did not receive any allowances, due to the fact that they operate on biomass:

Table C2. Identified installations operating on biomass

	2007	2008-2012
Energy activities	4	4
Refineries	0	0
Production and processing of ferrous metal	0	0
Mineral industry	1	1
Other activities	0	0
Total installations not receiving allowances	5	5

C2.3 Collecting data at the installation level

Operators were asked to provide the following information via the standard questionnaire:

- general information on the installation (the address of the installation, contact data of the operator, etc).
- flowcharts of the technological process:

- historical and projected production of the installation;
- historic and projected inputs of fuel and raw materials.

The template of the questionnaire was developed in a such a manner which allowed the operators to provide the necessary data when calculating the emissions in compliance with the Monitoring and Reporting Guidelines. For this reason the questionnaires were required to be returned both in electronic and in paper format. The National Environmental Protection Agency (NEPA) under the supervision of the Ministry of Environment and Water Management (MEWM) coordinated the data collection and verified the submitted data.

C2.4 The assessment and verification of collected data

The data provided by the operators was independently verified by NEPA. The following checks have been carried out:

1. historic information was compared to other available sources (where available, such as sector reports, company reports, etc.);
2. information was checked from the point of view of its completeness, correctness, accuracy, consistency;
3. by taking into account the enlargement of capacity/partial closures were made comparisons between production times series and inputs of fuel and raw materials, emissions time series.

Where data was missing or incorrect, the necessary information was provided through direct contact with the operator or by sending back the questionnaires.

C2.5 Calculation of historic and projected emissions

Approach

On the basis of the verified data on historical and projected production and inputs, the historic and project emissions of each installation were calculated by NEPA, according to the provisions of the EU-Monitoring and Reporting Guidelines on the general calculation approach:

Fuel consumption x Emission Factor x Oxidation Factor[2]

The applied emission factors

The emission factors being applied for historic and projected emissions calculation are those listed in IPCC Guidelines – 1996. There are however several exemptions from to the abovementioned document, due to the fact that the 1996 guidelines do not provide factors for some of the inputs of fuel and raw materials which are used for the EU ETS activities. In these particular cases, emission factors were used from other official sources.

Emission factors used for the calculation are listed in the table below:

[2] An oxidation factor of 1 was used for all fuels and input materials.

Table C3. Emissions factors for fuels and raw materials

Fuels	Emission factor (tCO2/TJ)	Source
A) Liquid fuels		
Primary fuels		
Crude oil	73.3	IPCC, 1996[1]
Orimulsion (fuel composed of natural bitumen dispersed in water)	80.7	IPCC, 1996
Liquefied natural gas	63.1	IPCC, 1996
Secondary fuels		
Gasoline	69.3	IPCC, 1996
Kerosen[2]	71.9	IPCC, 1996
Diesel oil	74.1	IPCC, 1996
Fuel oil	77.4	IPCC, 1996
Liquefied petroleum gas (LPG)	63.1	IPCC, 1996
Ethane	61.6	IPCC, 1996
Naphta	73.3	IPCC, 1996
Bitumen	80.7	IPCC, 1996
Lubricants	73.3	IPCC, 1996
Petroleum coke	100.8	IPCC, 1996
Refinery feedstocks	73.3	IPCC, 1996
Other oil products	73.3	IPCC, 1996
B) Solid fuels		
Primary fuels		
Anthracite	98.3	IPCC, 1996
Coking coal	94.6	IPCC, 1996
Other bituminous coal	94.6	IPCC, 1996
Sub-bituminous coal	96.1	IPCC, 1996
Lignite	101.2	IPCC, 1996
Oil shale	106.7	IPCC, 1996
Peat	106	IPCC, 1996
Secondary fuels		
BKB and patent fuel	94.6	IPCC, 1996
Coke oven/gas coke	108.2	IPCC, 1996
C) Gaseous fuels		
Carbon monoxide	155.2	Based on NCV of 10.12 TJ/ t[3])
Natural gas (dry)	56.1	IPCC, 1996
Methane	54.9	Based on NCV of 50.01 TJ/ t[4]
Hydrogen	0	No carbon content
Furnace gas	241.8	IPCC
Cracking coke	100.8	Corinair
H2 factory combustion gas	57	Corinair
Refinery gas	66.7	3,667(tCO2/tC) x 18,2(tC/TJ)

Raw materials	Emission factor (tCO2/t)	Source
$CaCO_3$	0.44	Depending on the carbon content
$MgCO_3$	0.522	Depending on the carbon content
Na_2CO_3	0.415	Depending on the carbon content
BaCO3	0.223	Depending on the carbon content
Marble	0.44	Depending on the carbon content
CaCO3 - MgCO3	0.477	Depending on the carbon content
Mg (CO3)2	0.784	Depending on the carbon content
Row cast iron	0.15	IPCC GL 2006
Cast iron waste	0.15	IPCC GL 2006
Steel waste	0.04	IPCC GL 2007
Iron waste	0.15	IPCC GL 2007
Graphite electrodes	3.007	EAF Carbon Electrodes (0.82%) - IPPC
Graphite electrodes waste	3.043	EAF Charge Carbon (0.83% C) - IPPC
Iron ore	0.15	Cast Iron
Oil coke	3.19	IPCC GL 2006
Ca C2	1.375	Calculated
Ash (1,5%C)	0.055	EF= 3.664 t CO2/t C *0.015

C3. Step 2: Calculation of the share in total emissions of the sector

The emission for the *relevant year* (herein defined as *relevant emission*) of each installation is calculated as the average of 2 years with highest emissions within the reference period this way a relevant year is created by taking into account the fluctuations in the activity of the installation). In order to avoid disadvantaging the installations with constant or relatively growing trend, a so called continuity factor is used to adjust the *relevant emission*, as shown in the formula below:

$$REL.E_{inst.i} = [\Sigma E_{max\ (2\ of\ 4)}]/2 \times CF$$

$\Sigma E_{max\ (2\ of\ 4)}$ = sum of the emissions from two years(out of four) with highest emissions within the reference period;
CF = continuity factor determined as follows:
if $Q_{REL}/ Q_{2007} < 95\%$ then CF = 105%
if $95\% \leq Q_{REL}/ Q_{2007} < 105\%$ then CF = 103%
Q_{REL} = average production of the two years in the reference period (2001 - 2004) with the highest emissions;
Q_{2007} = forecasted production for 2007.

The relevant emission of each sector is determined as a sum of emissions of all installations.

$$REL.E_S = \Sigma REL.E_{inst.i}$$

The share of each installation within the sector is based on its relevant emission (in the reference period 2001 – 2004) and the relevant emission of the sector, as shown in the formula below:

$$p_{inst.i.} = REL.E_{inst.i} / REL.E_S$$

$p_{inst.i}$ = the share of the installation (i) emission within the sector,
$REL.E_{inst.i}$ = installation (i) emission, for the relevant year
$REL.E_S$ = relevant emission of the sector (S).

$$REL.E_S = \Sigma\ (REL.E_{inst.i} + E_{inst.j})$$

The relevant emission of the sector is calculated as sum between the emissions of the installations with data and the emissions installations without historical data.

The share of the installation determined for 2007 is the same with the one for 2008 – 2012.

C4. Step 3: Calculating the amount of allowances allocated at the installation level

C4.1 Approach

General approach on the allocation

The amount of allowances allocated to each installation is determined based on the share of each installation within the sector.

CHP or Early Action bonus

If eligible an installation shall receive either CHP bonus or EA bonus. An installation cannot receive both the CHP and EA bonus. If eligible for both bonuses, an installation only receives CHP bonus. See **Annex F** and **G** for more details.

Direct JI reserve

Installations implementing a JI project shall receive allowances in the same way as any other installation. The operator cannot use the resulted ERUs to fulfill its own obligations under the scheme. Once ERUs are transferred, the operator must cancel an equal amount of allowances from the National Registry of greenhouse gas emissions. This applies only for the period 2008-2012.

Allocation to installation without historical data for the reference period

The allowances for installations without historical data were calculated in a different manner from the installations with data in the reference period; were considered installations without historical data those ones without data at least two years within the reference period. In these cases, allocation is based on the sub sector average specific emission for the reference period and on the installation forecasted production. The use of sub sector average emission was decided in order to illustrate better the real activity of the installation and keep a fair allocation within the sector.

C4.2 Calculation formulas

Allocation at installation level is based on the formula:

$$A_{inst.i} = p_{inst.i.} \times A_S + B_{COG} + B_{EA}$$

where:

A_S = allocation to sector (S),

$A_{inst.i}$ = allocation to installation (i),
$p_{inst.i}$ = the share of the installation (i) emission within the sector
B_{COG}= cogeneration bonus
B_{EA} = early actions bonus

Allocation to installation without historical data for the reference period:

$$A_{inst.j} = p_{inst.j.} \times A_S + B_{COG} + B_{EA}$$

$$p_{inst.j.} = E_{inst.j} / E_S$$

$$E_{inst.j} = E_{smspr} * Q_p * 95\%$$

where:

$A_{inst.spec.j}$ = allocation for installations without relevant data for at least two years within the reference period
A_S = allocation to sector (S);
$p_{inst.i}$ = the share of the installation (j) emission within the sector;
E_S = total emissions for sector (S), in the reference period, in the relevant year;
E_{smspr} = sub sector average specific emission for the reference period, determined on fuel and technology type
Q_p = forecasted production of the installation for year 2007;
95% = data credibility factor

ANNEX D - NEW ENTRANTS AND CLOSURE OF INSTALLATIONS

D.1 Approach

The approach in new entrants' participation in the emission trading scheme applies to the period 2007 and the period 2008-2012.

D1.1 Principles for allocation

Allocation to new entrants shall be done from a new entrants reserve (NER).

Allocation to new entrants shall be for free.

The NER shall be managed at national level and available for new entrants from all sectors at the beginning of each period, respectively 2007 and 2008. The NER is subtracted from the overall cap before distributing the allowances to the sectors.

Allowances from NER shall be allocated on the first come-first served basis. If the need of allowances of new entrants exceeds the reserve, operators must purchase the allowances on the market.

D1.2 Estimation of the NER

The New Entrants reserve was estimated based on data provided by operators through questionnaires (see section C for data collection details) and the existing governmental strategies or programmes that impose or sustain installations building or enlargement.
The New Entrants Reserve includes identified new entrants and a supplementary amount covering the possible unidentified new entrants.

D1.3 Eligibility and application

New entrant is any new installation or old installation that obtains the GHG permit or its revision following the notification of NAP to the EC. Installations identified after submitting the NAP to the EC are considered new entrants.

Should an existing installation increase its capacity, only the allowances for this increase shall be allocated from the NER. Access to the NER is also allowed for installations where occur changes in functioning of the installation or technology that lead to an increase in emissions amount due to an increase in production with at least 20% compared to the previous year of operation, under the condition that the production is at least equal with that declared by the operator in the questionnaire for the mentioned year.

Increase in CO_2 emissions resulted from legal obligations of the operators shall also allow them to have access to the NER.

D1.4 Treatment of surplus allowances in the NER

For the period 2007, allowances left unused by the end of the period shall be canceled.

In the period 2008-2012, allowances from NER left unused at the end of the period shall be auctioned.

D2. Calculation of the allocation to new entrants

D2.1 General principles for calculation

New entrants shall receive 95% of the calculated amount of allowances.

D2.2 Special conditions for new CHP installations

It has been decided that new CHP installations shall receive 99% of the calculated amount of allowances in order to balance that existing CHP installations receive a CHP bonus. This measure comes to encourage CHP development as an efficient and energy saving technology.

D2.3 Formula for calculating allocation

Allocation to new entrant is determined based on the formula:

$$A_{inst.ni} = E.S._{min} * Q_p * F$$

where:

$A_{inst.ni}$ = allocation for new entrant (i)
$E.S._{min}$ = specific emission of the most efficient installation within the sector, calculated by types of fuels and technology
Q_p = forecasted production for 2007 and/or 2008-2012
F = 99%, for cogeneration installations
F = 95%, for other installations

D3. Closure of installations

D3.1 Closure

An installation is considered permanent closed if for at least one year the below conditions are met simultaneously:

a) its production is zero;
b) its CO_2 emissions are zero;
c) the installation is not opened again in the future.

In case of demonstrated or notified closure, allowances of the installation remain valid throughout the respective year; for the rest of the years within the period allowances are transferred to the New Entrants Reserve.

D3.2 Temporary closure

An installation is considered temporary closed when its closure has been planned through its business plan or is due to unexpected situations and for at least one year the below conditions are met simultaneously:

a) its production is zero;
b) its CO_2 emissions are zero;
c) the installation is opened again after the demonstrated or notified closure took place.

In case of temporary closure, allowances for the period for which the installation is closed are transferred to NER, excepting the situation of planned/announced closure determined by the repairs/modernization.

D.3.3 Partial closure

One installation is considered partially closed when the operator decides to permanently reduce its capacity with at least 30% compared to the capacity mentioned in the GHGs permit and the CO_2 emissions decrease with more than 50 % compared to those from the reference period. The amount of allowances allocated to the installation is reduced proportionally with the decrease of production, beginning with the year of partial closure. Allowances related to decrease in emissions are transferred to NER.

D4. Size of the NER

Period	2007	2008 - 2012
NER	1,567,929	39,428,365
Share in total cap (%)	1.86	8.08

ANNEX E - JI RESERVE

E1. Principles

Romania has already approved several Joint Implementation project and intends to host JI projects in the future. See the National Strategy on Climate Change (adopted 2005).

To avoid double counting of emissions reduction from JI projects, Romania establish a JI reserve. This Annex describe the methodology when establishing the reserve.

The European Commission intends to publish guidance on avoiding double accounting emissions reductions that result from Joint Implementation (JI) projects.

In calculating the JI reserve, Romania has distinguished between direct JI and indirect JI.

1. Direct JI refers to installations covered by the Directive that host JI projects that result in emissions reduction at the installation itself.
2. Indirect JI refers to JI projects taking place outside the EU ETS but indirectly affecting covered installations under the EU ETS and are those JI projects which have effect on the emission reductions from the national grid (it has been taken into account only for 2008-2012 period).

ERUs can only be produced in the period 2008-2012. A JI reserve, therefore, has only been established for Phase II.

E2. Direct JI

The direct JI reserve is estimated on the basis of the inventory direct JI projects that have already obtained an endorsement or an approval by the Romanian Government, or that have submitted a Project Idea Note (PIN) for endorsement.

For each installation the expected number of ERUs that shall be produced in the period 2008-2012 is estimated.

E3. Indirect JI reserve

The indirect JI reserve is calculated on the basis of the inventory of indirect JI projects that have been endorsed or approved by Romania, or that have submitted a PIN for endorsement.

The indirect emissions reduction resulting from these projects are estimated.

The indirect JI reserve is subtracted from the total amount of allowances allocated to the energy sector. At the moment the monitored indirect emission reduction from the JI project have been verified, the same amount of allowances from the indirect JI reserve is cancelled.

0.2% of the indirect JI reserve shall be set aside for unknown new indirect JI projects.

E4. Size of the indirect JI reserve

Size of the indirect JI reserve 2008-2012:

	2008- 2012	
Indirect JI	**Allowances**	**% national cap**
	5,592,500	1.15

E5. Disposal of surplus allowances

For the period 2008-2012, any remainder in the indirect JI project reserve shall be auctioned.

ANNEX F - METHODOLOGY FOR CALCULATING THE BONUS FOR ENERGY EFFICIENT COMBINED HEAT AND POWER PRODUCTION

F1. Motivation and general principles

Romania consider that the implementation of the EU ETS provides an incentive for clean and energy efficient technologies. The Romanian Phase I and Phase II NAP support the environmental benefits from the efficient combined generation of heat and power, by allocating additional allowances to installations that use efficient CHP technology.

The bonus is applied for the allocation made for the year 2007 and period 2008-2012.

F2. Eligibility

A CHP bonus is calculated based on the CO_2 emissions reduction ought to the fuel savings generated by the use of cogeneration compared to separated electricity and heat generation.

The CHP bonus is granted to existing cogeneration installations only if they meet the following conditions:

1. The overall efficiency of the installations is minimum 65%, The overall efficiency is established as follows:

$$EF_{COG} = 100 \times (EE_{COG} + ET_{COG}) / c_{COG}$$

where:

EF_{COG} = efficiency of producing electricity and heat in cogeneration (%)
$EE_{.COG}$ = electricity produced in cogeneration in year (s) în (MWh)
$ET_{COG.}$ = useful heat produced in cogeneration, in year (s) in (MWht).
c_{COG} = fuel used for producing the electricity and heat in cogeneration, in year (s) in (MWht)
s = one of the two years in the reference period used for calculating emissions (the one for which EF_{COG} is the highest)

2. there are fuel savings comparative to separate electricity and heat production. The fuel savings are calculated with the following formula::

$$E.C. = [(EE_{COG}/c_{COG})/ EF.EE_{SEP} + (ET_{COG}/c_{COG})/ EF.ET_{SEP}) - 1]$$

where:

E.C. = fuel savings divided by the fuel consumption in the cogeneration installation;
EE_{COG} = electricity produced in cogeneration (TJ);
ET_{COG} = useful heat produced in cogeneration (TJ);
$EF.EE_{SEP}$ = electricity separate production efficiency in power plants in Romania (31,85%) [3];
$EF.ET_{SEP}$ = heat separate production efficiency in thermal plants in Romania (87,56%)[4];
c_{COG} = fuel used for heat and electricity production in cogeneration (TJ)

[3] Based on 2004 data, submitted by the Statistics National Institute to IEA-EUROSTAT-UNECE
[4] Idem 3

F3. Calculation of the CHP bonus

The bonus is calculated as follows:

$$B_{COG.inst.i} = 50\% * E.C. \times C_{COG} \times E.S._{sist.comp.}$$

where:

$B_{COG.inst.i}$ = the cogeneration bonus for installation (i);
E.C. = fuel savings
C_{COG} = fuel used for producing electricity and heat in cogeneration, expressed in TJ/an, as average of fuel consumption for the 2 years of the reference period for which the emissions where calculated;
$E.S._{sist.comp.}$ = specific GHG emissions for the unit of fuel used in a comparative system, calculated as specific emission of the power plants using natural gas in the national power grid; its value is 0,06 tCO2/TJ (Based on 2004 data, submitted by the Statistics National Institute to IEA-EUROSTAT-UNECE)

New cogeneration installations

The new cogeneration installations should benefit from the same treatment as the existing ones. In the allocation process from the NER, they shall benefit from a special treatment compared to other types of new entrants.
See Annex D.

ANNEX G - METHODOLOGY FOR CALCULATING THE BONUS FOR EARLY ACTION

G1. Motivation

Criterion 7 of Annex III of the Directive allows Romania to have the option of taking early action (EA) into account.

The reference period adopted in the NAP is 2001-2004. The relevant emissions are the average emissions of the two years with the highest emissions in this period. This approach already accommodates for companies reducing emissions by early action from 2003 onwards.

In the period before, however, as a result of privatization started in the mid-nineties, many companies have invested voluntarily in energy efficiency.

Romania, therefore, intends to award operators who have voluntarily invested in emission reduction in the period 1998-2002. Early action in this period shall be taken into in account by providing a bonus to installations that comply with the eligibility criteria, for both the 2007 period and 2008-2012.

G2. Eligibility

Installations in all sectors are eligible for the early action bonus.

Early action must be related to a planned investment targeting a reduction in greenhouse gas emissions.

The project qualifying as early action must be a project that resulted in GHG emissions reduction, within the 1998 – 2002 period.

The resulted emissions reduction must be additional to mandatory emissions reduction (resulted from implementing EU or national legislation) at the time when the action was taken.

It is not possible to receive both a bonus for early action and one for efficient CHP.

G3. Calculation of the bonus

The EA bonus is calculated using the formula:

$$B_{EA.inst.i} = (E.S._{ip} - E.S._{dp}) * [\Sigma Q_{min(2\ from\ 4)}]/2$$

where:

$B_{AT.inst.}$ = early action bonus awarded at the installation level;
$E.S._{ip}$ = specific emissions reductions before project implementation;
$E.S._{dp}$ = installation specific emission after project implementation;
$Q_{min(2\ from\ 4)}$ = sum of 2 years with minimum production in the reference period.

G4. Procedure for application, verification and approval of the installations which accomodate early actions

The application and verification procedure has been coordinated by NEPA. The MEWM has decided on the eligibility criteria which must be met by the installations receiving early actions bonus.

Operators were given the opportunity of applying for the early action bonus. Together with the application, operators provided the following information to NEPA:

- annual GHG emissions in the period 1998-2002 (specific emissions before and after project implementation);
- detailed description of project;
- information proving the additionallity of the project.

The data provided by operators were verified using the same procedure as the one used for the historical emissions determination.

G5. Total bonus for early action

The Early Action reserve is of 5,203,971 allowances for 2007 and 5,203,971 allowances per year for 2008 – 2012 (26,019,855 allowances for the period). As the bonus is awarded for installations from all sectors, it shall be subtracted from the overall cap.

ANNEX H - EXPLANATORY NOTE ON BANKING OF ALLOWANCES

The banking of allowances refers to the use allowances issued in a certain period (and not used in this period) in the following period(s).

H1. Banking within the period 2008-2012

Within the second phase, 2008-2012, allowances issued for that period are valid throughout the entire period and until four months after the beginning of the next period. Thus, allowances issued in one period are valid until the end of April of the next period.

Allowances not surrendered nor cancelled within one year in the trading period can be used to meet obligations in the following year of that same period. In other words, banking within the trading period (e.g. from 2008 to 2009) is allowed.

H2. Banking between the 1st phase (2007) and the 2nd phase (2008-2012)

Romania does not allow banking from the 1st to the 2nd phase. International transfer of EU allowances from the 1st to the 2nd phase would have effects on the amount of AAUs and Romania`s capability to meet the Kyoto target. On medium and log term can appear effects on the economical growth possibilities.

Only 3, out of the 25, EU Member States have allowed banking.

ANNEX I - EXPLANATORY NOTE ON ALLOWANCES TRANSFER

Allowances transfer from a closed installation to a new entrant is only accepted provided the respective installations have the same type of production /final product and operate in the same sector.

Allowances transfer can be performed between installations belonging to the same operator or between installations belonging to various operators, provided there is a contract concluded between them, to this purpose.

The transfer can be carried out as follows:
a) from one closing installation to a new entrant;
b) from several closing installations to a new entrant;
c) from one closing installation to several new entrants.

Installations between which the transfer is carried out can operate on parallel for at the most 6 months, when the production transfer between respective installations should be accomplished.

Allowances transfer from a Romania-based installation to a different Member State-based installation is not allowed.