ANRE Progress Report
on the implementation of the 2004/8/EC Directive and of
the Government Decision No. 219/2007

1. Transposition of 2004/8/EC Directive

The provisions of 2004/8/EC Directive were transposed into the national legislation through Government Decision (GD) No. 219/2007 regarding the promotion of cogeneration based on a useful heat demand, published in the Official Gazette of Romania (MO) No. 200/23 march 2007.

2. Harmonized efficiency reference values for separate production of electricity and heat

In accordance with the provisions referred to in Article 4 paragraph (3) of GD No. 219/2007, ANRE issued Order No. 13/2007 to approve the harmonized efficiency reference values for separate production of electricity and heat and the correction factors that are applicable at national level. Order 13/2007 is published in MO No. 434/2007 and the approved values are the ones set in the 2007/74/EC Decision.

3. Statistics – reporting year 2006

According to the provisions in Article 13, paragraph (3) of GD No. 219/2007 (Art. 10, paragraph 3 of the 2004/8/EC Directive) ANRE performed an analysis of the electricity and heat production from cogeneration in accordance with the calculation methodology shown in Annex II of the Directive 2004/8/CE and of the cogeneration and fuel capacities used in the cogeneration process and of the primary energy savings obtained from cogeneration in accordance with the calculation methodology showed in Annex III of the Directive 2004/8/CE.

Table 1 shows these data at national level and, additionally, the data regarding the use of electricity and heat from cogeneration (delivery/own consumption) and the fuel mix used for electricity and heat production from cogeneration.

Table 2 includes data regarding the weight, of the total amount at national level, of the electricity and of the generation capacities used in the cogeneration process, the energy primary sources utilised in cogeneration plants, of which the ones admissible for cogeneration, the amount of high efficiency electricity, etc.

Mention should be made though, that ANRE uses an alternative method to determining the electricity from high efficiency cogeneration, in accordance with the provisions referred to in Article 15, paragraph 2 of GD No. 219/2007 (Art. 12, item 2 of 2004/8/EC Directive). The priority production is

currently qualified as per the "Regulation for priority production qualification", approved through ANRE Order 33/2004 and published, with the subsequent amendments and complements, in the Official Gazette of Romania No. 1192/2004.

As shown in the Tables below, the amount of electricity from cogeneration determined as showed in Annex II of the Directive 2004/8/CE, represents about 11% of the total electricity production in Romania although the amount of electricity produced in cogeneration power plants represents 26.2% of the total production. Taking into consideration the alternative calculations used by Romania, the amount of high efficiency electricity estimated to be qualified for the support scheme ranges within 6.4 – 7.5 TWh, meaning that it is higher than 4.7 – 5.2 TWh which is the amount of high efficiency electricity determined as shown in Annex III of the Directive 2004/8/CE. The variations are due to the technological schemes of the cogeneration units proposed for qualification. As regards the cogeneration technologies used, the steam condensing extraction turbines prevail (84%). The primary energy admissible for cogeneration, determined as shown in Annex II of the Directive 2004/8/CE, represents about 61% of the total primary energy used, the associated primary energy savings determined as shown in Annex III of the Directive 2004/8/CE being 10.3%.

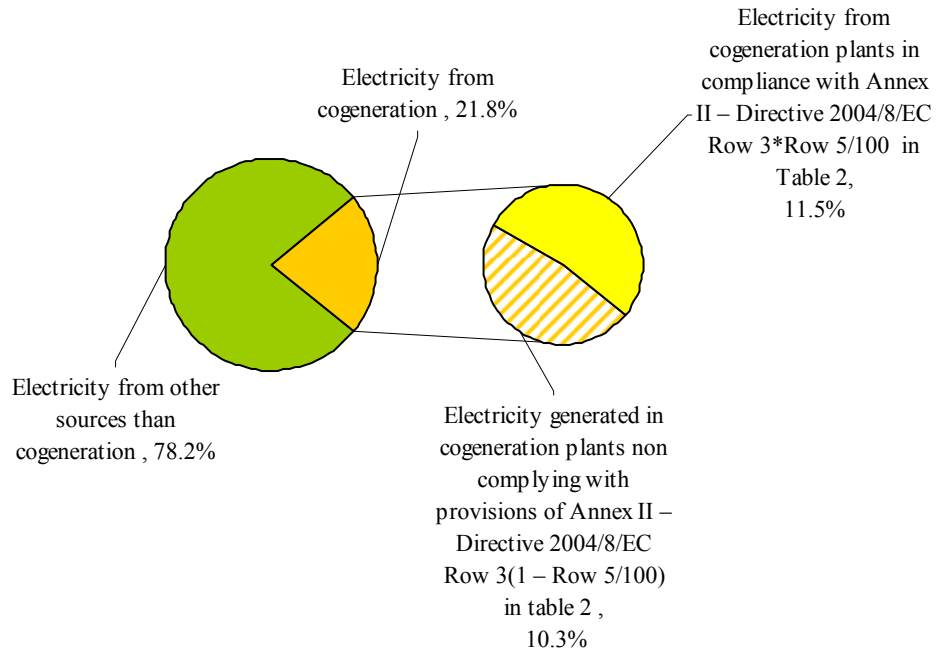
Tabel 1

Electricity production from cogeneration (Annex II - Dir. 2004/8/EC)	Public	Auto-producers	Cogeneration % from the national electricity production	Total capacity in cogeneration	Heat production from cogeneration	Public	Auto-producers	Fuel for cogeneration (Annex II - Dir. 2004/8/EC)	Solid fossil fuel	Oil	Natural gas	Renewable & waste	Other fuels	Primary energy savings (Annex III - Dir. 2004/8/EC)	
TWh	%	%	%	GW	PJ	%	%	PJ	%	%	%	%	%	%	PJ
7.15	**87%**	**13%**	**11%**	**4.43**	**82.7**	**85.3%**	**14.7%**	**136.2**	**37.4%**	**13.1%**	**48.9%**	**0.0%**	**0.6%**	**10.3%**	**15.7**

Tabel 2

Row	Description							TWh/GWh/PJ	%
1	Electricity production						TWh	62.43	
2	Electricity production from cogeneration						TWh	13.60	
3	Row 2 / Row 1 *100 [%]								21.8%
4	Electricity production from cogeneration (Annex II - Dir. 2004/8/EC)						TWh	7.15	
5	Row 4 / Row 2 *100 [%]								52.6%
6	Total capacity						GW	17.94	
7	Capacity in cogeneration						GW	4.43	
8		Steam condensing extraction turbines					GW	3.72	
9		Row 8 / Row 7 *100 [%]							84%
10		Steam backpressure turbines					GW	0.62	
11		Row 10 / Row 7 *100 [%]							14.1%
12		Internal combustion engines					GW	0.03	
13		Row 12 / Row 7 *100 [%]							0.7%
14		Gas turbines					GW	0.06	
15		Row 14 / Row 7 *100 [%]							1.3%
16	Total fuel used for cogeneration						PJ	223.9	
17	Fuel for cogeneration (Annex II - Dir, 2004/8/EC)						PJ	136.2	
18	Row 17 / Row 16 *100 [%]								60.9%
19	High efficiency electricity (Annex III - Dir. 2004/8/EC)						TWh	4,7- 5,2	
20		% of total cogeneration production	(Row 19 / Row 2 *100 [%])						34,55%- 38,23
21		% of total efficient cogeneration (Annex II - Dir. 2004/8/EC)		(Row 19 / Row 4 *100 [%])					65,7%- 72,7%
22	Electricity qualified for support scheme						TWh	6.4-7.5	
23	Fuel for cogeneration (Annex III - Dir. 2004/8/EC)						PJ	80,1- 87,6	
24	Primary energy savings (absolute value)- high effcicency energy						PJ	12,1- 15,7	
25	Primary energy savings (relative value) - high efficiency energy								10,3- 13,2%
26	Global generation efficiency								80,1%- 84,5%

Figure 1: Electricity from cogeneration as percentage from the total produced electricity, Annex II - Dir. 2004/8/EC



Note: All percentages are calculated using as base total electricity production (Row 1 in Table 2)

Figure 2: Electricity from cogeneration

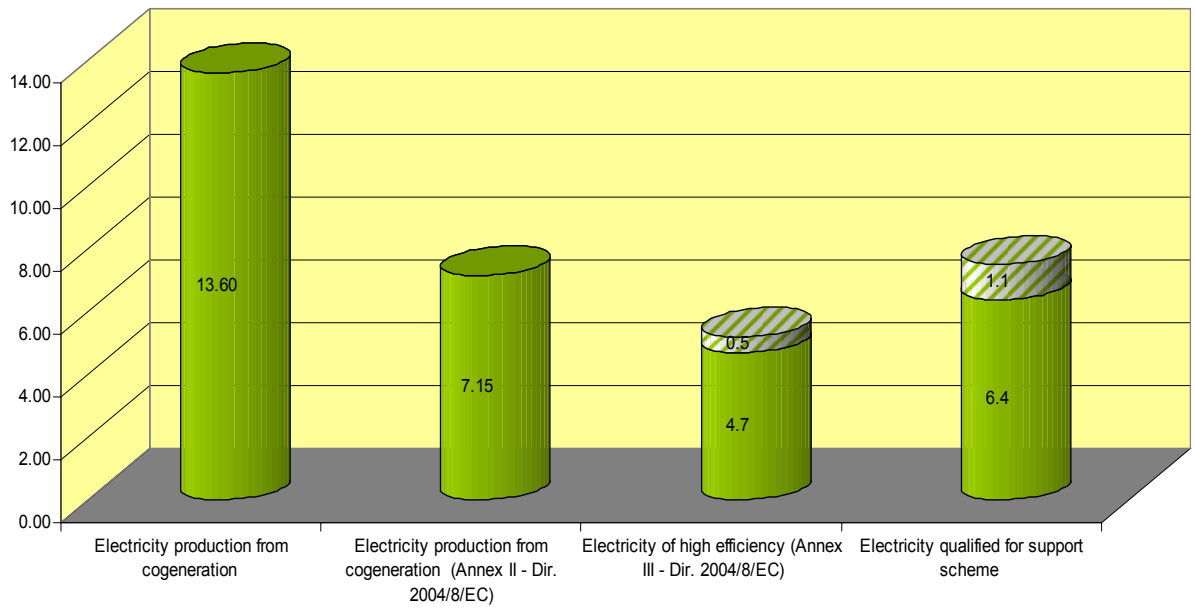
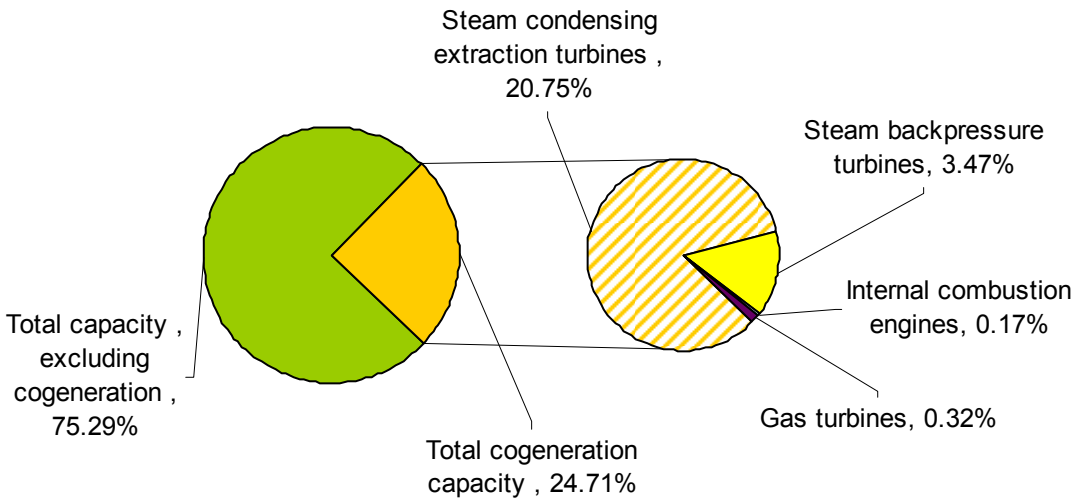


Figure 3: Electricity generation capacities



Note: All percentages are calculated using as base total electricity capacities (Row 6 in Table 2)

Figure 4: Cogeneration fuel mix (Annex II - Dir. 2004/8/EC)