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### COMMISSION OF THE EUROPEAN COMMUNITIES



Brussels, 12.11.2009 SEC(2009)1581 final

# COMMISSION STAFF WORKING DOCUMENT Accompanying the

# REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

### PROGRESS TOWARDS ACHIEVING THE KYOTO OBJECTIVES

(required under Article 5 of Decision 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol)

{COM(2009) 630}

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#### 1. DETAILED ANALYSIS OF EMISSION TRENDS IN THE MAIN SECTORS

### 1.1. Energy supply and use, excluding transport

Table 1: GHG emissions from energy supply and use, excluding transport (1990-2007)

Total GHG emission	Share in 1990 total GHG	Share in 2007 total GHG	Change 1990-2007	Change 2000-2007
EU-15	60.4%	58.5%	-7.4%	-1.2%
EU-27	62.9%	59.8%	-13.8%	-1.2%

- Total GHG emissions from energy supply and use decreased in the period 1990-2007 by 7.4% in EU-15 and by 13.8% in EU-27.
- Total EU-15 greenhouse gas emissions from energy supply were 1 % above 1990 levels in 2007 whereas fuel combustion increased by 20 % during the same time. Highest absolute reductions were achieved in Germany and the United Kingdom. In the EU-27 emissions were 8 % below 1990 emissions in 2007. This reduction was achieved despite increased fuel combustion of 6 %.
- Total EU-15 greenhouse gas emissions from energy use were 15 % below 1990 levels in 2007. Fuel combustion, however, decreased only by 4 % between 1990 and 2007. Highest absolute reductions were achieved in Germany. In the EU-27 emissions were 20 % below 1990 emissions in 2007. Fuel combustion, however, decreased only by 8 % between 1990 and 2007.
- The decoupling of fuel combustion and greenhouse gas emissions in the EU-15 and the EU-27 is caused by fuel switching (e.g. from coal to gas or renewable) and efficiency improvements.
- Greenhouse gas emissions from energy supply in EU-15 and EU-27 are expected to be below 2007 levels in 2010. Germany, Italy, Spain and the United Kingdom project that they will contribute most to the EU-15 emission reductions between 2007 and 2010.
- Greenhouse gas emissions in the EU-15 and EU-27 from energy use are expected to be above 2007 levels in 2010. The highest absolute increase within the EU-15 is expected for Germany. France, Italy and the United Kingdom expect the highest reductions between 2007 and 2010 within the EU-15.
- For the energy supply and use sector (excluding transport), the key EU-wide Common and Coordinated Policies and Measures (CCPMs) that are projected to deliver greatest savings in the EU-27 are in the areas of renewable energy, combined heat and power (CHP), energy taxation and energy performance standards in buildings.

### 1.2. Transport

Table 2: GHG emissions from transport (1990-2007)

Total GHG emissions	Share in 1990 total GHG	Share in 2007 total GHG	Change 1990-2007	Change 2000-2007
EU-15	16.5%	21.3%	23.7%	4.0%
EU-27	14.0%	19.5%	26.0%	7.1%

- Transport sector noted the highest increase in total GHG emissions. Total GHG emissions from transport increased by 24% in EU-15 and by 26% in EU-27, between 1990-2007. The trend of greenhouse gas emissions follows closely the trend of fuel combustion.
- Highest absolute increases occurred in France, Italy and Spain. Germany was the only EU-15 Member State that achieved a reduction between 1990 and 2007.
- Road transport represents 93 % of total transport CO<sub>2</sub> emissions (international aviation excluded) in 1990. CO<sub>2</sub> emissions from road transport increased by 25 % between 1990 and 2007, after 2003 emissions stabilised in the EU-15.
- Final energy demand for road transport, fuel combustion and CO<sub>2</sub> emissions show a very similar increasing trend. There is a stronger increase in passenger transport (36 %) and especially freight transport (65 %) and emissions start to decouple from km driven.
- N<sub>2</sub>O increased by 20% or more in all Member States except Hungary, Lithuania and the United Kingdom. The increase in N<sub>2</sub>O emissions is mainly due to the introduction of catalytic converters.
- Additional measures will be necessary to keep control over GHG emissions from transport sector in the coming years.

#### 1.3. Agriculture

Table 3: GHG emissions from agriculture (1990-2007)

Total GHG emissions	Share in 1990 total GHG	Share in 2007 total GHG	Change 1990-2007	Change 2000-2007
EU-15	9.9%	9.2%	-11.3%	-7.8%
EU-27	10.4%	9.2%	-20.2%	-6.3%

- Agriculture is the main CH<sub>4</sub> and N<sub>2</sub>O emitter and accounts for 9% of total EU-15 GHG emissions in 2007. Total EU-15 greenhouse gas emissions from agriculture were 11% below 1990 levels. Highest absolute reductions were achieved in France, the Netherlands and the United Kingdom. In the EU-27 emissions were 20% below 1990 emissions in 2007.
- Swine and cattle contribute more or less equally to CH<sub>4</sub> emissions from manure management.
- The decrease in emissions is largely a consequence of efficiency improvements, the reform of the EU common agricultural policy (CAP) as well as the implementation of the Nitrate Directive aimed at reducing water pollution.
- For EU-15, the decrease in emissions from agricultural soils was most significant for direct emissions from the application of synthetic fertilizer (-25%), followed by indirect emissions from leaching and run-off (-17%) and volatilization of NH3+NOx (-16%). In the latter two cases, the reduction of emissions can be explained by a reduction of nitrogen input, as the implied emission factor was not or only slightly (leaching) changing during the reporting period. Animal manure applied to soils has been to some extent replaced by animal waste application; however the overall N<sub>2</sub>O emissions have come down by 1% between 2006 and 2007.
- Greenhouse gas emissions in the EU-15 and EU-27 are expected to be slightly below 2007 levels in 2010. France, Germany and Spain project the highest reductions (in the range of 1-2 Mt CO<sub>2</sub> equivalents) during this time.

### 1.4. Industrial processes

Table 4: GHG emissions from industrial processes (1990-2007)

Total GHG emissions	Share in 1990 total GHG	Share in 2007 total GHG	Change 1990-2007	Change 2000-2007
EU-15	8.8%	8.2%	-10.8%	0.8%
EU-27	8.6%	8.5%	-9.9%	6.3%

- Total EU-15 greenhouse gas emissions from industry were 11 % below 1990 levels in 2007. Highest absolute reductions were achieved by France, the Netherlands and the United Kingdom. In the EU-27 emissions were 10 % below 1990 emissions in 2007.
- Cement production, chemical industry and metal production dominate the trend of total GHG emissions from industrial processes. Factors for declining emissions in the early 1990s were low economic growth and cement import from east European countries. It is projected that cement production in the EU-15 will increase by 2010 by 2 %.
- Between 1990 and 2007, HFC emissions increased from almost zero to 57 Mt CO<sub>2</sub> eq. in EU-15. Between 2000 and 2007 EU-15 HFC emissions from consumption of halocarbons increased by 90 %, while HFC emissions from production of halocarbons decreased by 89 %. HFC emissions from refrigeration and air conditioning equipment are the most important sub-category as regards the amount of emission. The main reason for this strong increase is the phase-out of ozone-depleting substances such as chlorofluorocarbons under the Montreal Protocol and the replacement of these substances with HFCs. EU-15 Member States show much higher HFC emissions than the EU-12 Member States.
- Policies and measures in this sector are mainly aimed at abatement measures in adipic and nitric acid production and on substitutes for HFCs in refrigeration and air conditioning.
- Greenhouse gas emissions in the EU-15 and EU-27 are expected to be below 2007 levels in 2010. Germany, the Netherlands and the United Kingdom project that they will contribute most to the EU-15 emission reductions between 2007 and 2010.

#### 1.5. Waste management

Table 5: GHG emissions from waste management (1990-2007)

Total GHG emissions	Share in 1990 total GHG	Share in 2007 total GHG	Change 1990-2007	Change 2000-2007
EU-15	4.0%	2.6%	-38.9%	-23.0%
EU-27	3.8%	2.8%	-33.7%	-18.0%

- Total EU-15 greenhouse gas emissions from waste were 39 % below 1990 levels. Highest absolute reductions were achieved in the United Kingdom and Germany. In the EU-27 emissions were 34 % below 1990 emissions in 2007.
- Greenhouse gas emissions in the EU-15 and EU-27 are expected to continue decreasing between 2007 and 2010. Within the EU-15 Germany and Spain project the highest reductions (in the range of 2-3 Mt CO<sub>2</sub> equivalents).
- The main driving force of CH<sub>4</sub> emissions from solid waste disposal is the amount of biodegradable waste and the amount of CH<sub>4</sub> recovered and utilised or flared. The Landfill Directive limits the amount of biodegradable waste going to landfill to 65 % (by 2006), 50 % (by 2009) and 35 % (by 2016) of the waste generated in 1995. The implementation of the Directive means also that all new landfill sites must have gas recovery facilities and

that such facilities will need to be installed in all existing landfill sites by 2009. The achievement of these goals implies further reductions in methane emissions, part of which have already occurred. However, many Member States are still far from fulfilling the Directive's targets.

#### 2. GHG EMISSIONS IN THE EU CANDIDATE COUNTRIES

The Republic of Croatia is a Party to the Convention from April 1996 and ratified the Kyoto Protocol in May 2007 committing to a 5% reduction of GHG compared to base year. Between 1990 and 2007 Croatia's GHG emissions increased by 3% and comparing to 2006 increased by 5.3%. CO<sub>2</sub> emissions per capita are at 7.3 tons and CO<sub>2</sub> intensity of GDP is around the double of that of the EU. In 2007, Croatia's emissions were 32.4 MtCO<sub>2</sub>-eq. or 10% below base year emissions. Croatia is projected to slightly exceed its Kyoto target taking into account existing measures and carbon sinks, but would meet and indeed overachieve the target with the effect of planned (additional) measures.

**Turkey** became an Annex I Party to the UNFCCC in May 2004 and ratified the Kyoto Protocol in May 2009. Turkey's first national communication to the UNFCCC was submitted in January 2007. In 2009 Turkey submitted its inventory of greenhouse gas emissions and removals in the country until 2007. In 2007, Turkey's emissions were 373 MtCO<sub>2</sub>-eq compared to 170 MtCO<sub>2</sub>-eq. in 1990, an increase of 119% and comparing to 2006 increased by 12%. Between 1990 and 2007, per capita GHG emissions have increased in Turkey. However, at 5.3 tonnes, the capita emissions in Turkey are about half of the average EU-27 per capita emissions. Turkey's emissions intensity doubled between 1990-2007, whereas in EU-27 emissions per GDP decreased by 45% over that period.

The former Yugoslav Republic of Macedonia (fYRoM) became a Party to UNFCCC in January 1998 and ratified the Kyoto Protocol in November 2004. FYRoM is considered a developing country under the Convention and its Protocol. In January 2009 the fYRoM submitted to the UNFCCC secretariat its 2<sup>nd</sup> National Communication, including inventory of GHG emissions from 1990-2002. Between 1990 and 2002 total GHG emissions decreased by around 10%. Currently CO<sub>2</sub> emissions per capita are at level of 4.1 ton and GDP per capita amounts to 2300 €in 2005. Currently, there is no information on projections available for the former Yugoslav Republic of Macedonia.

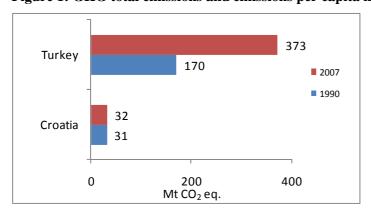
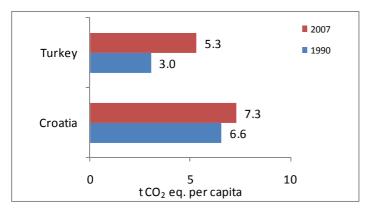


Figure 1: GHG total emissions and emissions per capita in the EU candidate countries



Source: EEA

Table 6: GHG emissions in CO<sub>2</sub> equivalents (excl. LULUCF) and Kyoto Protocol targets for 2008–12

	1990	Base Year (1)	GHG emissions 2007 (3)	Change 2006-2007	Change 2007 relative to Base Year	EU burden- sharing or Kyoto target	EU burden- sharing or Kyoto target
		in Mt CO2	in Mt CO2	in %	in %	in %	in Mt CO2
Austria	79,0	79,0	88,0	-3,9%	11,3%	-13,0%	69
Belgium	143,2	145,7	131,3	-3,9%	-9,9%	-7,5%	135
Bulgaria	117,7	132,6	75,8	5,4%	-42,8%	-8,0%	122
Cyprus	5,5	5,5	10,1	1,6%	83,6%	no target	no target
Czech Republic	194,7	194,2	150,8	1,2%	-22,4%	-8,0%	179
Denmark	69,1	69,3	66,6	-6,2%	-3,9%	-21,0%	55
Estonia	41,9	42,6	22,0	14,8%	-48,3%	-8,0%	39
Finland	70,9	71,0	78,3	-2,0%	10,3%	0,0%	71
France	562,6	563,9	531,1	-2,0%	-5,8%	0,0%	564
Germany	1215,2	1232,4	956,1	-2,4%	-22,4%	-21,0%	974
Greece	105,6	107,0	131,9	2,9%	23,2%	25,0%	134
Hungary	99,2	115,4	75,9	-3,7%	-34,2%	-6,0%	108
Ireland	55,4	55,6	69,2	-0,7%	24,5%	13,0%	63
Italy	516,3	516,9	552,8	-1,8%	6,9%	-6,5%	483
Latvia	26,7	25,9	12,1	3,5%	-53,4%	-8,0%	24
Lithuania	49,1	49,4	24,7	8,1%	-49,9%	-8,0%	45
Luxembourg	13,1	13,2	12,9	-2,9%	-1,9%	-28,0%	9
Malta	2,0	2,0	3,0	2,6%	50%	no target	no target
Netherlands	212,0	213,0	207,5	-0,5%	-2,6%	-6,0%	200
Poland	459,5	563,4	398,9	-0,1%	-29,2%	-6,0%	530
Portugal	59,3	60,1	81,8	-3,4%	36,1%	27,0%	76
Romania	243,0	278,2	152,3	-1,0%	-45,3%	-8,0%	256
Slovakia	73,3	72,1	47,0	-4,1%	-34,8%	-8,0%	66
Slovenia	18,6	20,4	20,7	0,7%	1,8%	-8,0%	19
Spain	288,1	289,8	442,3	2,1%	52,6%	15,0%	333
Sweden	71,9	72,2	65,4	-2,2%	-9,3%	4,0%	75
United Kingdom	771,1	776,3	636,7	-1,7%	-18,0%	-12,5%	679
EU-15	4232,9	4265,5	4052,0	-1,6%	-5,0%	-8,0%	3924
EU-27 (2)	5564,0	5767,3	5045,4	-1,2%	12,5%	no target	no target

<sup>(</sup>¹) For EU-15 the base year for carbon dioxide, methane and nitrous oxide is 1990; for the fluorinated gases 12 Member States have selected 1995 as the base year, whereas Austria, France and Italy have chosen 1990. As the EU-15 inventory is the sum of Member States' inventories, the EU-15 base year estimates for fluorinated gas emissions are the sum of 1995 emissions for 12 Member States and 1990 emissions for Austria, France and Italy. The EU-15 base year emissions also include emissions from deforestation for the Netherlands, Portugal and the UK. The base year for carbon dioxide, methane and nitrous oxide for Bulgaria is 1988, for Hungary is the average of 1985-1987, for Slovenia 1986, for Poland 1988, for Romania 1989; for the fluorinated gases Slovakia has chosen 1990 as the base year and Romania 1989 all other central and eastern European members states have selected 1995.

 $\boldsymbol{Note:}$  Malta and Cyprus do not have Kyoto targets.

<sup>(2)</sup> EU-27 does not have a common Kyoto Protocol target.

<sup>(3)</sup> This data has not yet been reviewed by the UNFCCC

Table 7: EU-15 Kyoto targets for non-ETS sectors for 2008–2012, compared with emission projections

Member State	Base- year emissions (BY)	Kyoto or sharing	burden- g target	Projection s of non- ETS emissions with existing policies and measures	Projections of non- ETS emissions with additional policies and measures	sharing the n	r burden- target for on-ETS ctors	carl	vals from oon sink tivities	mech	of Kyoto anisms at nment level	the no sectors, carbon	target for on-ETS including sinks and echanisms	no projec existin and in	between on-ETS ctions with ng policies measures uitial Kyoto arget	ETS p with a polic measure target carbon	tween non- rojections additional cies and s and Kyoto including a sinks and nechanisms
				Annual average 2008-2012	Annual average 2008-2012		l average 3-2012		al average 08-2012		al average 08-2012		l average 8-2012		al average 08-2012		al average 08-2012
		Mt	% change			Mt	% of	Mt	% of	Mt	% of	Mt	% of	Mt	% of	Mt	% of base-
	Mt CO <sub>2</sub> -	CO <sub>2</sub> -	from	Mt CO <sub>2</sub> -		CO <sub>2</sub> -	base-year	CO <sub>2</sub> -	base-year	CO <sub>2</sub> -	base-year	CO <sub>2</sub> -	base-year	CO <sub>2</sub> -	base-year	CO <sub>2</sub> -	year
	eq.	eq.	BY	eq.	Mt CO <sub>2</sub> -eq.	eq.	emissions	eq.	emissions	eq.	emissions	eq.	emissions	eq.	emissions	eq.	emissions
Austria	79,0	68,8	-13,0%	59,1	57,9	38,1	48,2%	0,7	0,9%	9,0	11,4%	47,8	60,4%	21,0	26,6%	10,2	12,9%
Belgium	145,7	134,8	-7,5%	79,9	79,7	76,3	52,4%	0,0	0,0%	4,4	3,0%	80,7	55,4%	3,6	2,5%	-1,1	-0,7%
Denmark	69,3	54,8	-21,0%	36,4	36,4	30,3	43,7%	2,2	3,2%	4,2	6,1%	36,7	52,9%	6,2	8,9%	-0,2	-0,3%
Finland	71,0	71,0	0,0%	35,4	34,9	33,4	47,1%	0,6	0,8%	1,4	2,0%	35,4	49,9%	1,9	2,7%	-0,6	-0,8%
France	563,9	563,9	0,0%	409,5	382,0	431,1	76,5%	4,1	0,7%	0,0	0,0%	435,2	77,2%	-21,6	-3,8%	-53,2	-9,4%
Germany	1.232,4	973,6	-21,0%	463,2	443,7	520,5	42,2%	4,5	0,4%	0,0	0,0%	525,1	42,6%	-57,3	-4,7%	-81,4	-6,6%
Greece	107,0	133,7	25,0%	63,9	61,5	64,6	60,4%	1,1	1,1%	0,0	0,0%	65,8	61,5%	-0,7	-0,7%	-4,3	-4,0%
Ireland	55,6	62,8	13,0%	49,9	46,4	40,5 281.6	72,9%	2,2 10.2	4,0%	3,6	6,5%	46,4	83,4%	9,4	16,8%	0,0	0,0%
Italy	516,9 13,2	483,3 9,5	-6,5% -28.0%	316,3 10.6	308,1 10.4	7.0	54,5% 53.1%	0.0	2,0%	17,1 3,7	3,3% 28.1%	308,9 10,7	59,8% 81.2%	34,7	6,7% 27.2%	-0,8 -0,3	-0,2% -1,9%
Luxembourg Netherlands	213,0	200,3	-6,0%	125,1	125,1	112.8	52,9%	0,0	0,0%	13,0	6,1%	125,9	59.1%	12,4	5,8%	-0,3	-1,9%
Portugal	60.1	76,4	27.0%	50,9	50.4	41.6	69.1%	4,7	7,7%	4,8	8,0%	51,1	39,1% 84.9%	9,4	15,6%	-0,8	-0,4%
Spain	289,8	333,2	15.0%	226,6	217.4	180.9	62,4%	5.8	2,0%	31.8	11.0%	218.6	75,4%	45,7	15,8%	-1,2	-0,4%
Sweden	72,2	75,0	4,0%	43,7	42,9	52,2	72,4%	2,1	3,0%	0,0	0.0%	54,4	75,4%	-8,6	-11,9%	-11,5	-16,0%
United Kingdom	776,3	679,3	-12,5%	362,2	362,2	433,1	55,8%	4,0	0,5%	0,0	0,0%	437,1	56,3%	-70,9	-9,1%	-74,9	-9,6%
EU-15	4.265,5	3.924,3	-8,0%	2.335,7	2.266,0	2.348,0	55,0%	42,4	1,0%	93,1	2,2%	2.483,5	58,2%	-12,3	-0,3%	-217,4	-5,1%

**Note:** The following method was applied to estimate the annual average for 2008-2012 figures: A distinction has been operated between the Member States who submitted emission projections for the whole five-year commitment period (Belgium, Ireland, Italy, Netherlands), those who reported annual emissions for the whole commitment period (Denmark and Spain) and those who reported emission projections for the single year 2010 only (all other MS). In the latter case, emissions for the whole commitment period were estimated by EEA, based on 2007 emissions (reported to UNFCCC) and, 2010 and 2015 projections (reported under the EU Monitoring Mechanism). All Member States, except France, Greece and Portugal, submitted emissions projections for the ETS and the non-ETS sectors. To estimate projections for the non-ETS sectors in those countries that did not submit differentiated projections, it was assumed that projections in the ETS sectors were equal to allowed emissions under the National Allocation Plan for the period 2008-2012.

Table 8a: Aggregate of EU-15 MS' projections for the various scenarios

	Base year emissions	Projections w	Ū	ng + with Kyoto mechanisms use by governments		+ with carbon sinks		+ with allowance and credit acquisition by EU ETS sectors		+ with additional measures	
	Mt CO2 eq.	Annual average 2008-2012 Mt CO2 eq.	% change from base year	Annual average 2008-2012 Mt CO2 eq.	% change from base year	Annual average 2008-2012 Mt CO2 eq.	% change from base year	Annual average 2008-2012 Mt CO2 eq.	% change from base year	Annual average 2008- 2012 Mt CO2 eq.	% change from base year
Aggregate of EU-15 MS with measures projections	4.265,5	3.973,1	-6,9%	3.880,0	-9,0%	3.837,6	-10,0%	3.776,5	-11,5%	3.706,8	-13,1%

Table 8b: Aggregate of EU-27 MS' projections for the various scenarios

	Base year emissions		with existing sures	-	mechanisms vernments	+ with carbon sinks		+ with additional measures	
		Annual average 2008-2012 Mt CO2 eq.	% change from base year						
A	Mt CO2 eq.	1111 00 <b>2 0</b> 4.				1111 0 0 <b>2 0</b> 41		1111 00 <b>2 0</b> q.	
Aggregate of EU-27 MS with measures projections	5.767,3	5.026,9	-12,8%	4.949,3	-14,2%	4.901,4	-15,0%	4.813,9	-16,5%

Table 9: Summary of implemented and planned policies and measures

### **Cross-cutting measures**

Policies and measures 'Cross-cutting'	Emission reduction potential in_2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in_2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable/comments
EU Emission Trading Scheme	N/a	N/a	In force. First phase (2005-07)Second phase (2008-12)Third phase (2013-20)
Revision of the monitoring mechanism	N/a	N/a	In force
Link Kyoto flexible mechanisms to emissions trading	N/a	N/a	In force

### **Energy Supply**

Policies and measures 'Energy supply'	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable/comments
Promotion of electricity from RES-E (2001)	100-125 <sup>21</sup>		In force.
(New) Renewable energy Directive		600-900 <sup>22</sup>	In force.
CCS Directive	N/a	$0.875^{23}$	In force.
Directive on promotion of cogeneration	65 <sup>24</sup>		In force
Further measures on renewable heat (including biomass action plan)	36-48 <sup>25</sup>		Biomass Action Plan, Dec 2005, over 20 further actions planned. Renewable heat included in proposed new Directive on renewable energy
Intelligent Energy for Europe: programme for renewable energy	N/a		Programme for policy support in renewable energy
Developing the internal energy market	80-120 <sup>21</sup>		Amendments to a number of directives <sup>26</sup> to continue to help complete the internal energy market.
TOTAL	282-358	600.9-900.9	

## **Energy demand**

Policies and measures 'Energy demand'	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable /comments
			In force
Directive on the energy	$20^{27}$		l.,
performance of buildings	20		Monitoring and review
Directive on the energy performance of buildings			Currently in second reading; agreement expected for
(recast)		$190-290^{28}$	December 2009.
Directive requiring energy			20071
labelling of domestic			
appliances			In force: monitoring and review
-Existing labels	$1^{21}$		
	**/		Consultation on amending
- New (el. ovens &AC)	N/a		Directive held in 2008.
- Envisaged revisions			
(refrigerators / freezers / dishwashers)			
- Planned new (hot water			
heaters)	$10^{21}$		
- Extension of scope of	10		
Directive	15 <sup>21</sup>		
Framework Directive on			
eco-efficiency			
requirements of energy-		20029	In force; preparatory studies for
using products		$200^{29}$	daughter directives underway;
Directive on energy end use efficiency and energy			In force; National Energy Efficiency Action Plans adopted
services	$92^{30}$		in all EU-27.
Action Plan on Energy			Launched Oct 2006 <sup>31</sup> . Identifies
efficiency as a follow-up to the Green Paper	N/a		10 priority actions to achieve up to 20% energy savings by 2020.
Action under the directive	14/4		to 20% energy savings by 2020.
on integrated pollution			Reference document on Best
prevention and control			Available Techniques regarding
(IPPC) on energy			Energy Efficiency now finalised
efficiency	Not known		and will be adopted in 2008.
Intelligent Energy for			
Europe programme for	N/a		Programme for policy support in energy efficiency
energy efficiency	N/a		Supporting program as part of
Public awareness campaign			Intelligent Energy for Europe: In
on energy efficiency	N/a		implementation
Programme for voluntary	• •		Supporting programme for
action on motors (Motor	21		voluntary action on efficient
Challenge)	30 <sup>21</sup>		motor systems
	21		EU Handbook developed for
	25-40 <sup>21</sup>		guidance for increased energy
Public procurement			efficient public procurement
TOTAL	193-208	390-490	

## Transport

Policies and measures 'Transport'	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable / comments
Fuel quality Directive		$62.5^{32}$	First implemented in 1998. Revisions adopted in December 2008
Directive on the promotion of transport bio-fuels	35-40 <sup>21</sup>		In force
Voluntary agreements with European, Japanese and Korean car manufacturers.	75-80 <sup>21</sup>		Implemented
Strategy for Car CO <sub>2</sub>		50 <sup>33</sup>	Adopted
Infrastructure charging for heavy goods (revised Eurovignette)	N/a		Adopted
Shifting the balance of transport modes	N/a		Package of measures in implementation
Fuel taxation	N/a		In force Focus on EU harmonisation of taxation, not on CO <sub>2</sub> reduction; ongoing review
Directive on mobile air conditioning systems: HFCs	See regulation on fluorinated gases		In force
Inclusion of Aviation in EU ETS		183 <sup>34</sup>	Adopted. Will include all flights from 1/01/2012
Public procurement of vehicles		1.9 <sup>35</sup>	
TOTAL	110-120	297.4	

## Industry & non CO<sub>2</sub> gases

Policies and measures 'Industry'	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable / comments
Regulation on fluorinated gases	23 <sup>36</sup>		In force
IPPC & non-CO <sub>2</sub> gases	60-70 <sup>21</sup>		In force In 2008 the Directive was codified.

### Waste

Policies and measures 'Waste'	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable / comments
Landfill Directive	$41^{21}$		In force
Waste Framework Directive			Adopted.  Launched December 2005 <sup>37</sup> , including a revision of the original waste directive of 1975, revised in 2008.
Directives on waste electrical and electronic equipment (WEEE)	35 <sup>38</sup>		In force. Revised directive in 2008

## **Integration Research & Development**

Policies and measures	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable/comments
			In force. Under the 7 <sup>th</sup>
			Framework program (FP7),
			which runs from 2007 to 2013, a budget of 50.5 billion euros will
			be allocated over the entire
			period. Over 2.3 billion to
R&D framework Program	N/a		energy related R&D activities.
Red Hamework Hogiam	1 (/ α		CIP runs from 2007 to 2013 with
			a total budget of 3.6 billion
			euros. The CIP is divided in
Competitiveness and			three operational programmes
Innovation Framework			two of which are related to
Programme (CIP)			energy and climate change.

### **Integration Cohesion Policy**

Policies and measures	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable/comments
			The Community Strategic
			Guidelines highlight investments
			to promote Kyoto commitments,
			including renewable energy,
			energy efficiency and
			sustainable transport systems as
			eligible areas for support. About
			€48 billion are planned to co-
Integration climate change			finance projects on climate
in structural funds			change in the 2007-2013
&cohesion funds	N/a	N/a	Cohesion Policy.

## Agriculture

Policies and measures 'Agriculture'	Emission reduction potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Emission reduction potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable/comments
CAP health check (2003 reform) - Rural development policies - Market policies	60-70 <sup>39</sup> 12 <sup>39</sup>		Adopted. In 2008 the EU Commission decided to move to new changes to the CAP.
Rural development policy	N/a		Rural development policy for 2007-13 focus on:  - Improving competitiveness  - Improving the environment - Improving quality of life and encourage diversification of the rural economy.
Support scheme for energy crops	N/a		Abolished as of 2010
N <sub>2</sub> O from soils	10 <sup>40</sup>		Improved implementation of the nitrates Directive
Proposed soil directive	N/a	N/a	The European Climate Change Programme (ECCP) Working Group on Sinks Related to Agricultural Soils estimated this potential at equivalent to 1.5 to 1.7% of the EU's anthropogenic CO2 emissions during the first commitment period under the Kyoto Protocol <sup>41</sup>

### Forests

Policies and measures 'Forests'	Sequestration potential in 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Sequestration potential in 2020 in EU-27 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable/comments
EU Forest Action Plan	N/a	N/a	Adopted. The Forest Action Plan presented in June 2006 builds on the EU's Forestry Strategy adopted in 1998.
Afforestation and reforestation: - Afforestation programmes			Possibility for support through forestry scheme of rural
- Natural forest expansion	$14^{21}$		development
Forest management (various measures)	19 <sup>21</sup>		Possibility for support through forestry scheme of rural development, dependent on national implementation.

Table 10: Key figures of the emissions trading scheme for 2005-2007 and 2008 for EU-27

		Numbe installati			cated ances		ified sions	Difference allocated all and ve emiss	llowances rified
		2005-07 <sup>(b)</sup>	2008	2005-07	2008	2005-07	2008	2005-07	2008
				[1 000	EUA <sup>(c)</sup> ]	[kt C0	[kt CO2 eq]		
1	Combustion installations	6 938	7 047	1 469 934	1 236 490	1 490 293	1 490 512	-1%	-17%
2	Mineral oil refineries	148	145	159 619	150 374	150 626	152 325	6%	-1%
3	Coke ovens	20	21	22 789	22 527	20 857	20 989	9%	7%
4	Metal ore roasting or sintering	20	28	25 248	21 928	17 209	17 643	47%	24%
5	Pig iron or steel	229	233	155 631	184 622	131 478	132 897	18%	39%
6	Cement clinker or lime	531	544	193 715	205 066	186 884	187 550	4%	9%
7	Glass including glass fibre	412	429	22 495	23 835	20 497	22 675	10%	5%
8	Ceramic products by firing	1 140	1 052	18 118	17 941	14 821	13 220	22%	36%
9	Pulp, paper and board	798	788	37 138	37 425	29 769	31 011	25%	21%
99	Other activity opted-in	323	393	2 424	1 618	9 038	22 061	-73%	-93%
	All installations	10 559	10 680	2 107 111	1 901 826	2 071 472	2 090 883	2%	-9%

#### Notes:

**Source:** Community independent transaction log (CITL) (29 April 2009 and 26 May 2009).

<sup>(</sup>a) All installations which have participated in the scheme are included, even if their account is already closed.

<sup>(</sup>b) For this analysis installations have been included if allocated allowances or verified emissions have been published for each year. With this attribute the average values are not the same as in last year's report, where averages have been calculated in a different way.

<sup>(</sup>c) European Union Allowance.

Table 11: Overview on the EU ETS verified emissions and 2<sup>nd</sup> NAPs

Member State	Average 2005–2007	Share of EU	2008	2008 - 2012	CDM / JI
	verified emissions	ETS in total	verified	EU ETS cap	limit for EU
		GHG	emissions		ETS
		emissions in			operators
		2007			
	Mt CO <sub>2</sub> -eq. per year	%	Mt CO2-eq.	Mt CO <sub>2</sub> -eq./yr	%
Austria	32,50	36%	32,0	30,7	10,0%
Belgium	54,30	40%	55,5	58,5	8,4%
Bulgaria	40,60	52%	38,0	42,3	12,6%
Cyprus	5,24	53%	na	5,5	10,0%
Czech Republic	84,49	58%	80,1	86,8	10,0%
Denmark	30,41	44%	26,5	24,5	17,0%
Estonia	13,30	70%	13,5	12,7	0,0%
Finland	40,06	54%	36,2	37,6	10,0%
France	125,81	24%	123,4	132,8	13,5%
Germany	473,96	51%	472,6	453,1	20%
Greece	70,79	55%	69,9	69,1	9,0%
Hungary	26,11	35%	27,2	26,9	10,0%
Ireland	21,67	31%	20,4	22,3	10,0%
Italy	221,70	41%	220,7	201,6	15,0%
Latvia	2,84	24%	2,7	3,4	10,0%
Lithuania	6,33	24%	6,1	8,8	20,0%
Luxembourg	2,63	20%	2,1	2,5	10,0%
Malta	1,98	67%	na	2,1	tbd
Netherlands	78,92	38%	83,5	87,5	10,0%
Poland	207,37	53%	204,1	208,5	10,0%
Portugal	33,51	38%	29,9	34,8	10,0%
Romania	69,60	46%	63,6	75,9	10,0%
Slovak Republik	25,09	52%	25,5	32,6	7,0%
Slovenia	8,83	44%	8,9	8,3	15,8%
Spain	183,04	42%	163,5	152,3	20,0%
Sweden	19,43	29%	20,0	22,8	10,0%
United Kingdom	244,55	40%	265,0	246,2	8,0%
FU 07	0.405.4	400/	0.000.0	0.000.4	40.40/
EU 27	2.125,1	43%	2.090,9	2.090,1	13,4%

na – not available

tbd – to be determined

**Source:** EEA GHG data viewer and CITL, 8 July 2009; European Commission; Questionnaires and projection reports submitted under the EC greenhouse gas Monitoring Mechanism

Table 12: Planned government use of the Kyoto mechanisms

EU Member State	Planned use of Kyoto mechanisms at government level	Type of Kyoto mechanisms (IET, JI, CDM)	Achievement of Kyoto target planned through domestic action only	Intended use of flexible mechanisms at government level [Mt CO <sub>2</sub> eq Jyr]	Allocated budget at government level [million EUR]
Austria	Yes	IET, JI, CDM	No	9,0	531
Belgium	Yes	IET, JI, CDM	No	4,4	252
Bulgaria	No	-	Yes		-
Cyprus	No	-	Not applicable (a)		-
Czech Republic	No	-	Yes		-
Denmark	Yes	IET, JI, CDM	No	4,2	152
Estonia	No	-	Yes		-
Finland	Yes	IET, JI, CDM	No	1,4	70
France	No	-	Yes		-
Germany	No	-	Yes		-
Greece	No	-	Yes		-
Hungary	Yes	IET	Yes	-16.5 (b)	-
Ireland	Yes	IET, JI, CDM	No	3,6	290
Italy	Yes	IET, JI, CDM	No	17,1	79
Latvia	No	-	Yes		-
Lithuania	No	-	Yes		-
Luxembourg	Yes	IET, JI, CDM	No	3,7	330
Malta	No	-	Not applicable (a)		-
Netherlands	Yes	IET, JI, CDM	No	13,0	506
Poland	No	-	Yes		-
Portugal	Yes	IET, JI, CDM	No	4,8	305
Romania	No	-	Yes		-
Slovak Republic	No	-	Yes		-
Slovenia	Yes	IET, JI, CDM	No	1.0 (c)	80
Spain	Yes	IET, JI, CDM	No	31,8	409
Sweden	No	(JI, CDM)	Yes	(2) (d)	38
United Kingdom	No	-	Yes		-
Total EU-15	Yes	IET, JI, CDM	No	93,1	2962

#### **Notes:**

The exchange rates US\$ and SEK per Euro were assumed to be 1.4 and 10.19, respectively.

Source: Questionnaires submitted under the EC greenhouse gas Monitoring Mechanism; projection reports.

<sup>(</sup>a) Cyprus and Malta are non-Annex I Parties to the Kyoto Protocol and do not have an emissions target for the period 2008-2012.

<sup>(</sup>b) Hungary is the only country which has reported quantified projections of AAU selling.

<sup>(</sup>c) Slovenia plans to acquire units either through project mechanisms or on the carbon market but has not yet decided on the exact quantity. The value depends on the actual development of emissions, especially in the transport sector.

<sup>(</sup>d) Sweden intends to achieve its Kyoto target without the use of flexible mechanisms but has made the necessary preparations to use them if necessary. Sweden intends to acquire 2 Mt CO2-eq. per year through the Swedish CDM and JI programme. This figure has not been considered in the target assessment for Sweden and EU-15.

Table 13: Projected net carbon stock changes under Articles 3.3 and 3.4 for the first commitment period

commitment period							
	Article 3.3		Article 3.4	1	Total		
	Net carbon stock change during 2008–12	Election of activities <sup>(1)</sup>	Net carbon stock change during 2008–12	Maximum allowance for forest management			
	[million tonnes CO <sub>2</sub> per year]		[million tonnes CO <sub>2</sub> per year]	[million tonnes CO <sub>2</sub> per year]	[million tonnes CO <sub>2</sub> per year]		
Austria	-0,7	None	n.a.	n.a.	-0,7		
Belgium	No estimates available	None	n.a.	n.a.	n.e.		
Bulgaria	Not reported	None	n.a.	n.a.	n.e.		
Cyprus	Not reported	n.a.	n.a.	n.a.	n.e.		
Czech Republic	Probably small sink	FM	Likely larger than max. allowance	- 1.17	-1,17		
Denmark	-0,288	FM, CM, GM	FM: - 3.6 CM&GM: - 1.72	-0,18	-2,185		
Estonia	No separate estimates available	None	n.a.	No separate estimates available	n.e.		
Finland	+ 1.9 to + 2.4	FM	- 2.5 to - 3.0	- 0.59	-0,59		
France	- 0.84	FM	-67,62	- 3.23	-4,07		
Germany	No estimates available	FM	- 7.3	- 4.55	-4,547		
Greece	-0,8	FM	- 2 to - 4	- 0.33	-1,13		
Hungary	Not reported	FM	Not reported	- 1.06	n.e.		
Ireland	-2,236	None	n.a.	n.a.	-2,236		
Italy	No separate estimates available	FM	-10,2	- 10.19	-10,2		
Latvia	Net sink	FM	No estimates available	- 1.25	n.e.		
Lithuania	No separate estimates available	FM	No separate estimates available	- 1.03	n.e.		
Luxembourg	Net sink	None	n.a.	n.a.	n.e.		
Malta	Not reported	n.a.	n.a.	n.a.	n.e.		
Netherlands	- 0.11	None	n.a.	n.a.	-0,11		
Poland	Net sink	FM	Likely larger than max. allowance	- 3.01	-3,01		
Portugal	- 3.36	FM, CM, GM	FM: - 0.8 CM&GM: - 0.5	-0,81	-4,66		
Romania	Not reported	FM, Revegetation	Not reported	- 4.03	n.e.		
Slovakia	Net sink	None	n.a.	n.a.	n.e.		
Slovenia	No estimates available	FM	-1,3	- 1.32	-1,3		
Spain	Not estimated separately	FM, CM	Not estimated separately	- 2.46	-5,8		
Sweden	0,6	FM	-15	-2,13	-2,13		
United Kingdom	-2,68	FM	-1,69	-1,36	-4,04		
EU15	-8,23		-25,57		-42,40		
EU27	-8,23		-31,07		-47,87		

#### Notes:

Consistent with the reporting of emission inventories a negative sign '-' is used for removals and a positive sign '+' for emissions; n.a.: not applicable; n.e.: not estimated.

<sup>(</sup>a) FM: forest management; CM: cropland management; GM: grazing land management.

- (b) In addition to accounting for forest management up to the maximum allowance Parties may account for removals from forest management to compensate net emissions under Art. 3.3. In Finland and Sweden, removals from forest management are projected to exceed the sum of emissions under Art. 3.3. and the maximum allowance for forest management.
- (c) Spain only estimated the aggregated reductions of Articles 3.3 and 3.4 together.
- (d) The individual sums for Art. 3.3 and 3.4 do not include the Spanish estimate.

**Source:** Questionnaires submitted by EU Member States; The European Community's initial report under the Kyoto Protocol (EEA Technical report No 10/2006); Initial reports under the Kyoto Protocol of Greece and Romania; Decisions 16/CMP.1 and 8/CMP.2 of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol.

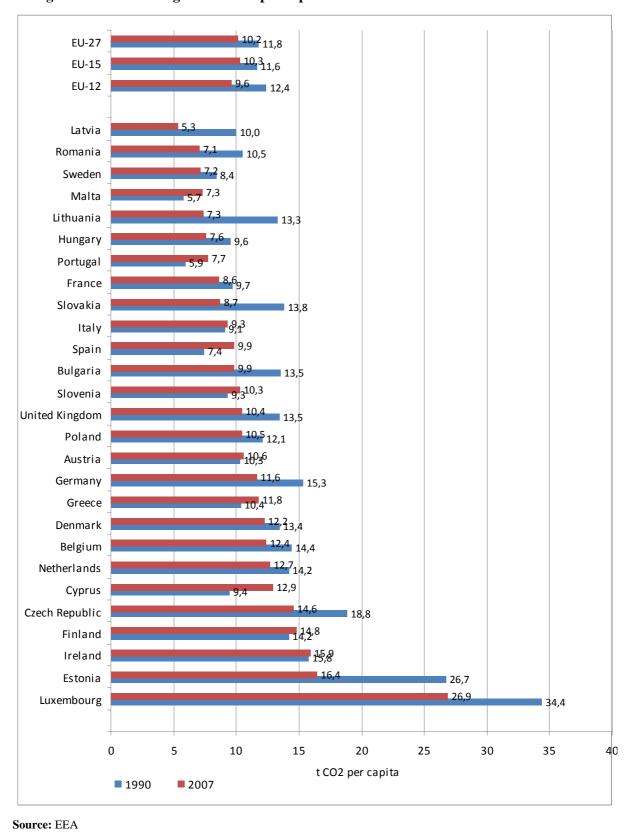


Figure 2: Greenhouse gas emissions per capita of EU-27 Member States for 1990 and 2007

Mt CO2-eq 0 100 200 300 400 500 600 700 800 900 1000 1100 CZ DK DK Ш FR DE GR ш ■ ETS □ non-ETS 3 Ε 뉟 Ч Р  $\overline{S}$ ES

Figure 3: Greenhouse gas emissions of EU-27 Member States for 2005-2007 split into EU ETS and non-ETS sectors

**Note**: The figure is a preliminary estimate.

Source: European Commission

#### **Technical notes**

- (1) In the Council decision (2002/358/EC) on the approval by the EU of the Kyoto Protocol the various commitments of the Member States are expressed as percentage changes from the base-year. In 2006 the respective emission levels were expressed in terms of tonnes of CO<sub>2</sub>-equivalent in the Commission Decision 2006/944/EC. In connection with Council decision 2002/358/EC, the Council of Environment Ministers and the Commission have, in a joint statement, noted "that the respective emission levels referred to in the decision shall be expressed in terms of tonnes of carbon dioxide equivalent, ..., taking into account the assumptions relating to base year emissions as also reflected in the relevant statements to the Council minutes to the Council Conclusions of 16-17 June 1998. ...". Following the UNFCCC reviews of Member States' 'initial reports' during 2007 and 2008 and pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol, the base-year emissions for the EU-15 have been fixed to 4 265.5 million tonnes CO2 equivalents.
- (2) The Annual European Community greenhouse gas inventory 1990–2007 and inventory report 2009 (EEA, Technical report No 4/2009). Under the EU monitoring mechanism decision (Decision 280/2004), all MS submitted all or almost all Common Reporting Format (CRF) tables, (i.e., more than 90 %) for 1990–2007.
- (3) Based on Member State (MS) submissions until May 31st.
- (4) EU 2020 climate target: 20% reduction requires five-fold increase in impact of CO2 polices, MNP 2008, L.G. Wesselink, H. Eerens, J. Vis
- (5) Cyprus and Malta do not have targets under the Kyoto Protocol
- (6) For further information see the EEA website: <a href="http://www.eea.europa.eu/highlights/new-estimates-confirm-the-declining-trend-in-eugreenhouse-gas-emissions">http://www.eea.europa.eu/highlights/new-estimates-confirm-the-declining-trend-in-eugreenhouse-gas-emissions</a>
- (7) The six corresponding legislative acts were published in the Official Journal of the European Union in June 2009(5.06.2009 L 40), and are already in force.
- (8) The projections are based on Member States' projections submitted in accordance with Decision 280/2004/EC and the draft EEA report "Greenhouse gas emission trends and projections in Europe 2009". The robustness of the GHG projection estimates from Member States is affected by both the uncertainty surrounding the current economic crisis and the recent adoption of the EU climate change and energy package which has not yet been taken into account by all Member States in their reported projections.
- (9) Directive 2009/29/EC expands, strengthens and improves the functioning of the EU ETS post-2012. From 2013 an emission cap will be set at EU level and cut each year to reach -21% in 2020 (comparing to 2005 levels). The auctioning system of allowances will be increased and ambitious ex-ante benchmark for free allocation. Industrial installations not subject to carbon leakage will be required to buy 20% of allowances in 2013 rising to 70% in 2020 and 100% in 2027, while those identified to be exposed to the risk of carbon leakage will receive 100% of the quantity determined by benchmarks for free. Use of offset credits from outside of the EU is allowed but this amount remains below half of the reduction effort in order to ensure a sufficient level of emissions reductions inside the EU. (OJ 5.06.2009 L 140),
- (10) Decision 406/2009/EC sets national commitments to reduce GHG emissions which are outside the scope of the EU ETS (small-scale emitters: transport, buildings, agriculture, waste), which represent some 60% of total GHG emissions in the EU. The

decision sets legally binding annual targets in the period 2013-2020 for each MS ensuring that by 2020 emissions from these sectors will be reduced at EU level by 10% comparing to 2005 levels. The efforts (targets ranging from -20% to +20%) are shared between MS according to differences in GDP per capita. Less wealthy Member States will be allowed to increase their emissions in non-ETS sectors by up to 20% above 2005 levels. These targets do, however, still represent a cap on their emissions and will still require a reduction effort compared to business as usual. By contrast, the wealthier Member States, with GDP/capita above the EU average, will have to reduce emissions, up to a maximum figure of -20% below 2005. (OJ 5.06.2009 L 140)

- (11) Directive 2009/28/EC on the promotion of the use of renewable energy sets legally binding targets for each Member State in order to reach the EU target of 20% share of renewable energy in the EU's final energy consumption by 2020. Also a 10% share of renewable energy sources in transport by 2020 target was adopted. (OJ 5.06.2009 L 140)
- (12) Directive 2009/31/EC on geological storage of CO<sub>2</sub> provides a legal framework to manage possible environmental risks and liability issues and includes a long-term incentive for investment in demonstration projects to capture and geologically store CO<sub>2</sub>. (OJ 5.06.2009 L 140)
- (13) Regulation (EC) No 443/2009 sets standards for CO<sub>2</sub> emissions from new passenger cars, which will ensure that emissions from the new car fleet are reduced to an average of 130g CO<sub>2</sub>/km by 2015. A stringent long-term target of 95g CO<sub>2</sub>/km by 2020 was also set. Estimate of total GHG emission savings per year amounts to 50 Mt CO<sub>2</sub> eq. (OJ 5.06.2009 L 140)
- (14) Fuel quality directive 2009/30/EC puts an obligation on suppliers to reduce greenhouse gas emission from entire fuel production chain by 6% by 2020. A review in 2012 will consider increasing the target to 10% by 2020. Estimate of total GHG emission savings per year amounts to 62.5 Mt CO<sub>2</sub>-eq. (OJ 5.06.2009 L 140)
- (15) Directive 2008/101/EC included aviation into EU ETS. It is estimated that a total of 183 million tonnes of CO<sub>2</sub> will be saved per year on the flights covered by the scheme equal to a 46% reduction by 2020 compared with business as usual. From 1 January 2012 flights between EU airports and all flights arriving or departing form the airports in the EU will be covered by the system. (OJ 13.01.2009 L 8)
- (16) OJ 15.05.2009 L 120
- (17) CITL, 30 June 2009
- (18) Please note that no data for Bulgaria is included yet, data for Romania are for 2007 only.
- (19) The 'combustion installations' sector contains units installations for the public supply of heat and electricity as well as installations in various industrial sectors. Depending on Member States and individual circumstances combustion installations belonging to the industrial sector (e.g., a heat plant in a paper mill) are either included in the sector 'combustion installations' or in the respective industrial sector (e.g., 'production of pulp and paper').
- (20) The revised directive on EU ETS allows existing operators (from 2013) to use JI and CDM credits in such a way that the overall use of credits is limited to 50% of the EU-wide reductions below the 2005 levels over the period 2008-2020 and for new sectors and aviation 50% of the reductions below the 2005 levels over the period from the

date of their inclusion in the EU ETS to 2020. This amounts to an overall JI/CDM limit of roughly 6.5% of the EU-wide cap over the period 2008-2020. The exact limits for each installation will still need to be determined but the Directive already grants to existing operators an access to credits of at least of 11% of their allocation during the period 2008-2012. In addition, new entrants and new sectors including aviation receive minimum levels of access to JI and CDM credits.

- (21) Second ECCP progress report April 2003 <a href="http://europa.eu.int/comm/environment/climat/pdf/second-eccp-report.pdf">http://europa.eu.int/comm/environment/climat/pdf/second-eccp-report.pdf</a>
- (22) Directive on the promotion of energy from renewable sources, Citizens' Summary, 23 January 2008
- (23) The original figure refers to a cumulative estimate of 7 MtCO2eq by 2020.
- (24) Proposal for a Directive of the European Parliament and of the Council on the promotion of cogeneration based on a useful heat demand in the internal energy market
- (25) COM (2005) 628 final "Biomass Action Plan, December 2005"
- (26) Decision No 1229/2003/EC, Regulation (EC) No 807/2004, Directive 2003/54/EC & 2003/55/EC, Regulation (EC) No 1228/2003
- (27) COM (2004)366 final "The share of renewable energy in the EU, May 2004
- (28) Energy performance of buildings impact assessment on the revised directive SEC(2008) 2864
- (29) Proposal for a directive on Eco design of EuP, COM (2003) 453 final
- (30) Proposal for a Directive of the European Parliament and of the Council on End-Use Energy Efficiency and Energy Services, COM(2003) 739 final
- (31) COM(2006)545 final "Action Plan for Energy Efficiency: Realising the Potential"
- (32) Questions and answers on the EU strategy to reduce CO2 emissions from cars, MEMO/07/46.
- (33) Questions and answers on the EU strategy to reduce CO2 emissions from cars, MEMO/07/46.
- (34) Inclusion of Aviation in the EU Greenhouse Gas Emissions Trading Scheme (EU ETS), Summary of the Impact Assessment, SEC(2006) 1685
- (35) Directive on the promotion of clean and energy efficient road transport vehicles, 2005/0283 (COD)
- (36) Regulation proposal on certain fluorinated greenhouse gases, COM (2003) 492 final
- (37) Thematic Strategy on Waste Prevention, COM (2005) 666 and 667 (final)
- (38) Value in 2011 Directive on waste electrical and electronic equipment (WEEE), (recast) Impact Assessment, {COM(2008) 810}, {SEC(2008) 2933}
- (39) From ECCP working group on agriculture and sub-group on carbon sinks related to agricultural soils. Some of potential for bioenergy crops will be covered within potential from biofuels, cogeneration from biomass, further promotion of RES-H etc.
- (40) EEA, 2008, GHG Trends and Projections in Europe http://www.eea.europa.eu/publications/eea\_report\_2008\_5/TPReport2008Annexes.pdf

(41) Thematic Strategy for Soil Protection, COM(2006)231