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**COMMUNICATION FROM THE COMMISSION**

**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(2008) 651}

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

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

- Member States expect the EU Emission Trading Scheme (EU ETS) to contribute an emission reduction of at least 133 Mt CO<sub>2</sub> in the EU-27 in 2010. Most reductions will result from actions in the energy and industrial sectors.
- 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 building standards.
- Emission reduction potentials for energy policies have stayed relatively constant since 2006 for the EU-15, with a broadly similar split between 'existing' and 'planned' policies.
- Policies and measures targeted at reducing emissions from energy generation are projected to provide greatest emission reductions in the energy supply and use sector by 2010.

**Table 1: GHG emissions from energy supply and use, excluding transport (1990-2006)**

Total GHG emission from energy supply	Share in 1990 total GHG	Share in 2006 total GHG	Change 1990-2006	Change 2000-2006
EU-15	60.3%	59.0%	4.3%	2.2%
EU-27	62.8%	60.4%	-11.2%	1.8%

- In the EU-15, the United Kingdom and Germany are the only Member States projecting that GHG emissions from energy supply and use (including transport) in 2010 will be lower than their 1990 emissions.
- All central and eastern European Member States project decreases in GHG emissions from energy supply and use (including transport) by up to 63% in the case of Estonia, except for Cyprus and Slovenia that project increased emissions in 2010 compared to 1990.

### 1.2. Transport

- According to recent data on the effectiveness of the strategy to reduce CO<sub>2</sub> emissions from cars (European Commission, 2008), all three associations reduced the average specific CO<sub>2</sub> emissions of their cars registered for the first time on the EU market in 2005 compared to 2006 (ACEA (0.2 %), JAMA (3.1 %) and KAMA (1.3 %)). Overall, average specific CO<sub>2</sub> emissions from new cars in the EU-15 -were equal to 160.4 g CO<sub>2</sub>/vehicle-km in 2006. This was 0.7 % below the 2005 level and 14 % below 1990 levels. In order to meet the EU's final target of 120 g CO<sub>2</sub>/km, additional efforts are necessary.

**Table 2: GHG emissions from transport (1990-2006)**

Total GHG emissions	Share in 1990 total GHG	Share in 2006 total GHG	Change 1990-2006	Change 2000-2006
EU-15	16.4%	21.1%	25.8%	5.0%
EU-27	14.0%	19.3%	27.4%	7.4%

- CO<sub>2</sub> emissions from road transport is the second largest key category in EU-15 and contributes 19% to total GHG emissions in 2006 (in 1990 the share was at 15%). CO<sub>2</sub> emissions from road transport increased by 25%, between 1990-2006.

- Final energy demand for transport, passenger kilometres in cars and CO<sub>2</sub> emissions show a very similar increasing trend of about 25-30%, while the increase of freight transport is much stronger, about 60 % in the EU-15.
- In 2006, the number of kilometres driven and emissions increased in all reporting countries compared to 1990, except Germany and the United Kingdom where emissions decreased. However, all reporting Member States project a further increase of kilometres driven by 2010.
- In the EU-15, GHG emissions from transport are projected to decrease slightly between 2006 and 2010, approximately 26% above 1990 levels in 2010 with existing measures. These emissions could be reduced at 19% above 1990 levels with the implementation of additional measures.
- Emissions from transport are projected to increase from 1990 levels in all EU-15 Member States except Germany. The lowest increase (lower than 15%) is projected in Finland, Sweden and the United Kingdom. Ireland and Portugal project an increase of more than 200 %.
- From the central and eastern European Member States, the Czech Republic and Romania project increase of more than 200 % of their transport emissions. Lithuania is the only Member State projecting emissions in 2010 to be lower than 1990.

### **1.3. Agriculture**

- The drop in GHG emissions from fertiliser use between 1990 and 2006 was achieved partly through the 1992 reform of the Common Agricultural Policy (CAP), resulting in a shift from production-based support mechanisms to direct area payments to agricultural production. The 2003 CAP reform, which included further decoupling of support from production, subject to the respect by farmers of a set of environmental legislation and other agricultural and environmental conditions (cross compliance), and measures within the Rural Development Policy, such as agro-environment programmes supporting extensification measures, are expected to lead to a further decline in GHG emissions. In addition, reduction in fertiliser use has also been achieved due to the implementation of EU legislation, particularly the Nitrates Directive.

**Table 3: GHG emissions from agriculture (1990-2006)**

GHG emission from 4	Share in 1990 total GHG	Share in 2006 total GHG	Change 1990-2006	Change 2000-2006
EU-15	10.2%	9.3%	-11.4%	-6.9%
EU-27	10.6%	9.2%	-20.1%	-5.7%

- In the EU-27, decreases in mineral and organic (manure) nitrogen fertiliser use and the efficiency improvements of farming practices, are likely to reduce N<sub>2</sub>O emissions, while decreases in the number of ruminants (cattle and sheep) and increases in cattle productivity are likely to contribute to a decline in emissions of methane.
- With the existing measures, emissions from agriculture are projected to be reduced by 2% compared to current levels and by 13 % compared to 1990 levels. Portugal and Spain project that their GHG emissions from agriculture in 2010 will be higher than in 1990. The highest relative reductions with all measures considered (more than 20 %) are projected by the Netherlands, Finland, Denmark, Germany and the United Kingdom.
- All central and eastern European Member States, except Cyprus, project decreases in GHG emissions from agriculture compared to 1990 emissions.

#### 1.4. Industrial processes

- Policies and measures are mainly aimed at abatement measures in adipic and nitric acid production (to reduce N<sub>2</sub>O emissions) and on alternatives (substitutes) for HFCs in refrigeration and air conditioning. Policies and measures in most Member States to implement the F-gas regulation and directive are at an early stage of development.

**Table 4: GHG emissions from industrial processes (1990-2006)**

Total GHG emissions	Share in 1990 total GHG	Share in 2006 total GHG	Change 1990-2006	Change 2000-2006
EU-15	8.8%	7.9%	-12.1%	-0.3%
EU-27	8.6%	8.1%	-12.8%	3.1%

- Emissions from industrial processes are projected to remain at the current level of 12% below 1990 levels. In the EU-15, Belgium, Germany, the Netherlands and the United Kingdom project that greenhouse gas emissions from industrial processes in 2010 will be lower than 1990 emissions with existing measures. The highest relative reductions are projected by the United Kingdom.
- Seven central and eastern European Member States (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Poland and Romania) project decreases in GHG emissions from industrial processes compared to 1990 emissions.

#### 1.5. Waste management

- Decreases in emissions of methane in particular but also carbon dioxide and nitrous oxide are expected to result from a range of (solid and water) waste management schemes, taxes and other measures such as the EU Landfill Tax (expected to reduce emissions by 5.8 Mt CO<sub>2</sub>-eq. in 2010).

**Table 5: GHG emissions from waste management (1990-2006)**

<b>GHG emission from 6</b>	<b>Share in 1990 total GHG</b>	<b>Share in 2006 total GHG</b>	<b>Change 1990-2006</b>	<b>Change 2000-2006</b>
<b>EU-15</b>	4.1%	2.6%	-38.7%	-22.7%
<b>EU-27</b>	3.9%	2.9%	-31.5%	-17.6%

- Emissions from the waste sector are projected to decrease more than in any other sector by 2010 (-44%). The highest reductions (more than 50%) are projected by Belgium, Germany, the Netherlands, Sweden and the United Kingdom. Only Ireland, Portugal and Spain project that their greenhouse gas emissions from waste in 2010 will be higher than in 1990.
- Only three of the EU-12 Member States (Bulgaria, Cyprus and Lithuania) project decreases in GHG emissions from waste compared to 1990 emissions.

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

Member State	1990 (million tonnes)	Base year <sup>(1)</sup> (million tonnes)	2006 <sup>(3)</sup> (million tonnes)	Change 2005–2006 (%)	Change base year– 2006 (%)	Targets 2008–12 under Kyoto Protocol and "EU burden sharing" (%)	Targets 2008–12 under Kyoto Protocol and "EU burden sharing" (million tonnes)
Austria	79.2	79.0	91.1	-2.3%	15.2%	-13.0%	68.8
Belgium	144.5	145.7	137.0	-3.8%	-6.0%	-7.5%	134.8
Bulgaria	116.7	132.6	71.3	1.2%	-46.2%	-8.0%	122.0
Cyprus	6.0	6.0	10.0	1.6%	66.0%	na	na
Czech Republic	194.2	194.2	148.2	1.7%	-23.7%	-8.0%	178.7
Denmark	69	69.3	70.5	10.9%	1.7%	-21.0%	54.8
Estonia	41.6	42.6	18.9	-2.3%	-55.7%	-8.0%	39.2
Finland	70.9	71.0	80.3	16.3%	13.1%	0.0%	71.0
France	563.3	563.9	541.3	-2.5%	-4.0%	0.0%	563.9
Germany	1,227.7	1,232.4	1,004.8	-0.2%	-18.5%	-21.0%	973.6
Greece	104.6	107.0	133.1	-0.5%	24.4%	25.0%	133.7
Hungary	98.2	115.4	78.6	-2.0%	-31.9%	-6.0%	108.5
Ireland	55.5	55.6	69.8	-0.8%	25.5%	13.0%	62.8
Italy	516.9	516.9	567.9	-1.7%	9.9%	-6.5%	483.3
Latvia	26.5	25.9	11.6	4.4%	-55.1%	-8.0%	23.8
Lithuania	49.4	49.4	23.2	2.4%	-53.0%	-8.0%	45.5
Luxembourg	13.2	13.2	13.3	0.2%	1.2%	-28.0%	9.5
Malta	2.2	2.2	3.2	-0.3%	45.0%	na	na
Netherlands	211.7	213.0	207.5	-2.0%	-2.6%	-6.0%	200.3
Poland	453.6	563.4	400.5	3.7%	-28.9%	-6.0%	529.6
Portugal	59.1	60.1	83.2	-4.8%	38.3%	27.0%	76.4
Romania	247.7	278.2	156.7	3.1%	-43.7%	-8.0%	256.0
Slovakia	73.7	72.1	48.9	-0.9%	-32.1%	-8.0%	66.3
Slovenia	18.6	20.4	20.6	0.6%	1.2%	-8.0%	18.7
Spain	287.7	289.8	433.3	-1.7%	49.5%	15.0%	333.2
Sweden	72.0	72.2	65.7	-1.7%	-8.9%	4.0%	75.0
United Kingdom	768.5	776.3	652.3	-0.5%	-16.0%	-12.5%	679.3
<b>EU-15</b>	<b>4243.8</b>	<b>4,265.5</b>	<b>4151.1</b>	<b>-0.8%</b>	<b>-2.7%</b>	<b>-8.0%</b>	<b>3924.3</b>
<b>EU-27<sup>(2)</sup></b>	<b>5572</b>	<b>5,768.0</b>	<b>5142.8</b>	<b>-0.3%</b>	<b>-10.8%</b>	<b>No common target</b>	<b>No common target</b>

<sup>(1)</sup> 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.

<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.

**Note:** Malta and Cyprus do not have Kyoto targets.

Table 7: EU Kyoto targets for 2008–12, compared with emission projections

				With existing policies and measures		Use of Kyoto Mechanisms (Govt.)		Use of Carbon Sinks		Additional policies and measures		With all measures, KM and carbon sinks			
	Kyoto BY emissions	Kyoto targets		Projections for 2010		Effect in 2010		Effect in 2010		Effect in 2010		Projections for 2010		Gap between projections and target	
	MtCO <sub>2</sub>	MtCO <sub>2</sub>	% of BY	MtCO <sub>2</sub>	% of BY	Mt CO <sub>2</sub>	% of BY	MtCO <sub>2</sub>	% of BY	MtCO <sub>2</sub>	% of BY	MtCO <sub>2</sub>	% of BY	MtCO <sub>2</sub>	% of BY
Austria	79.0	68.8	-13.0%	92.8	17.4%	-9.0	-11.4%	-0.7	-0.9%	-14.6	-18.4%	68.6	-13.3%	-0.2	-0.3%
Belgium	145.7	134.8	-7.5%	140.3	-3.7%	-7.0	-4.8%			0.0	0.0%	133.3	-8.5%	-1.5	-1.0%
Bulgaria	132.6	122.0	-8.0%	93.1	-29.8%					-6.8	-5.2%	86.3	-34.9%	-35.7	-26.9%
Cyprus	6.0	na	na	8.7	44.3%					-0.2	-2.9%	8.5	41.4%	na	na
Czech Republic	194.2	178.7	-8.0%	145.4	-25.1%			-1.2	-0.6%	-6.0	-3.1%	138.3	-28.8%	-40.4	-20.8%
Denmark	69.3	54.8	-21.0%	67.8	-2.2%	-4.2	-6.1%	-2.3	-3.3%	0.0	0.0%	61.3	-11.6%	6.5	9.4%
Estonia	42.6	39.2	-8.0%	15.9	-62.8%					-1.3	-3.0%	14.6	-65.7%	-24.6	-57.7%
Finland	71.0	71.0	0.0%	85.0	19.7%	-1.4	-2.0%	-0.6	-0.8%	-12.4	-17.4%	70.6	-0.6%	-0.4	-0.6%
France	563.9	563.9	0.0%	568.3	0.8%			-4.1	-0.7%	-24.0	-4.3%	540.2	-4.2%	-23.7	-4.2%
Germany	1232.4	973.6	-21.0%	955.1	-22.5%			-4.5	-0.4%	-40.9	-3.3%	909.7	-26.2%	-63.9	-5.2%
Greece	107.0	133.7	25.0%	132.6	23.9%			-1.2	-1.1%	-2.1	-2.0%	129.3	20.8%	-4.5	-4.2%
Hungary	115.4	108.5	-6.0%	86.7	-24.9%					-0.6	-0.5%	86.0	-25.4%	-22.4	-19.4%
Ireland	55.6	62.8	13.0%	68.3	22.8%	-3.6	-6.5%	-2.1	-3.7%	-0.1	-0.2%	62.5	12.4%	-0.3	-0.6%
Italy	516.9	483.3	-6.5%	555.4	7.5%	-20.7	-4.0%	-25.3	-4.9%	-16.5	-3.2%	492.9	-4.6%	9.6	1.9%
Latvia	25.9	23.8	-8.0%	14.0	-46.1%					0.0	0.0%	14.0	-46.1%	-9.9	-38.1%
Lithuania	49.4	45.5	-8.0%	34.4	-30.4%					0.0	0.0%	34.4	-30.4%	-11.1	-22.4%
Luxembourg	13.167	9.5	-28.0%	13.571	3.1%	-3.942	-29.9%			-0.15	-1.1%	9.481	-28.0%	0.0	0.0%
Malta	2.2	na	na	3.5	61.8%					0.0	0.0%	3.5	61.8%	na	na
Netherlands	213.0	200.3	-6.0%	208.3	-2.2%	-13.0	-6.1%	-0.1	-0.1%	0.0	0.0%	195.2	-8.4%	-5.1	-2.4%
Poland	563.4	529.6	-6.0%	403.2	-28.4%			-3.0	-0.5%	0.0	0.0%	400.2	-29.0%	-129.5	-23.0%
Portugal	60.1	76.4	27.0%	86.7	44.2%	-5.8	-9.6%	-4.7	-7.7%	-2.4	-4.0%	73.8	22.7%	-2.6	-4.3%
Romania	278.2	256.0	-8.0%	190.9	-31.4%					-10.8	-3.9%	180.0	-35.3%	-75.9	-27.3%
Slovakia	72.1	66.3	-8.0%	58.8	-18.4%					-2.3	-3.2%	56.5	-21.6%	-9.8	-13.6%
Slovenia	20.4	18.7	-8.0%	21.7	6.7%	-0.6	-2.9%	-1.7	-8.3%	-1.8	-8.7%	17.7	-13.2%	-1.1	-5.2%
Spain	289.8	333.2	15.0%	440.5	52.0%	-57.8	-19.9%	-5.8	-2.0%	-27.8	-9.6%	349.1	20.5%	15.8	5.5%
Sweden	72.2	75.0	4.0%	70.2	-2.7%			-2.1	-3.0%	0.0	0.0%	68.0	-5.7%	-7.0	-9.7%
United Kingdom	776.3	679.3	-12.5%	625.4	-19.4%			-4.0	-0.5%	0.0	0.0%	621.3	-20.0%	-58.0	-7.5%
EU-15	4265.5	3924.3	-8.0%	4110.2	-3.6%	-126.5	-3.0%	-57.5	-1.3%	-140.9	-3.3%	3785.3	-11.3%	-139.0	-3.3%
EU 27	5768.0	na	na	5186.4	-10.1%	-127.1	-2.2%	-63.4	-1.1%	-170.7	-3.0%	4825.3	-16.3%	na	na

**Table 8: Aggregate of MS' projections for the various scenarios**

	Base Year	Without Kyoto mechanisms and carbon sinks		With Kyoto mechanisms		With Kyoto mechanisms and carbon sinks		With additional measures, Kyoto mechanisms and carbon sinks	
	Mt CO2 eq.	2010 Mt CO2 eq.	% Change base year-2010	2010 Mt CO2 eq.	% Change base year-2010	2010 Mt CO2 eq.	% Change base year-2010	2010 Mt CO2 eq.	% Change base year-2010
Aggregate of EU-15 MS with measures projections	4,266	4,110	-3.6%	3,984	-6.6%	3,926	-8.0%	3,785	-11.3%
Aggregate of EU-27 MS with measures projections	5,768	5,186	-10.1%	5,059	-12.3%	4,996	-13.4%	4,825	-16.3%

**Table 9: Summary of implemented and planned policies and measures**

**Cross-cutting measures**

<b>Policies and measures 'Cross-cutting'</b>	<b>Emission reduction potential by 2010 in EU-15 (Mt CO<sub>2</sub>-eq.)</b>	<b>Stage of implementation /timetable /comments</b>
EU emissions trading scheme	146	In force
Revision of the monitoring mechanism	N/a	In force
Link Kyoto flexible mechanisms to emissions trading	187.5	In force

**Energy Supply**

<b>Policies and measures 'Energy supply'</b>	<b>Emission reduction potential by 2010 in EU-15 (Mt CO<sub>2</sub>-eq.)</b>	<b>Stage of implementation /timetable /comments</b>
Directive on renewable electricity	<b>100-125</b> <sup>(14)</sup>	In force
Directive on the promotion of transport bio-fuels	<b>35-40</b> <sup>(14)</sup>	In force
Directive on promotion of cogeneration	<b>22-42</b> <sup>(15)</sup>	In force
Further measures on renewable heat (including biomass action plan)	<b>36-48</b>	Biomass Action Plan, Dec 2005 <sup>(16)</sup> , over 20 further actions planned
Intelligent Energy for Europe: programme for renewable energy	N/a	Programme for policy support in renewable energy
<b>TOTAL in implementation</b>	<b>193-255</b>	

**Energy demand**

<b>Policies and measures 'Energy demand'</b>	<b>Emission reduction potential by 2010 in EU-15 (Mt CO<sub>2</sub>-eq.)</b>	<b>Stage of implementation / timetable /comments</b>	
Directive on the energy performance of buildings	<b>20</b> <sup>(17)</sup>	In force Monitoring and review	
Directive requiring energy labelling of domestic appliances	<b>20</b> <sup>(14)</sup>	In force Monitoring and review	
Existing labels			
New (el. ovens & AC)			<b>1</b>
Envisaged revisions (refrigerators / freezers / dishwashers)			<b>10</b>
Planned new (hot water heaters)			<b>23</b>
Extension of scope of Directive	N/k	In preparation	
Framework Directive on eco-efficiency requirements of energy-using products	dependent on implementation of daughter directives	In force; preparatory studies for daughter directives underway	

Directive on Energy services	<b>40-55<sup>(14)</sup></b>	In force
Action Plan on Energy efficiency as a follow-up to the Green Paper	N/a	Launched Oct 2006 <sup>(18)</sup> . Identifies 10 priority actions to achieve up to 20% energy savings by 2020.
Action under the directive on integrated pollution prevention and control (IPPC) on energy efficiency	Not known	In preparation
Intelligent Energy for Europe programme for energy efficiency	N/a	Programme for policy support in energy efficiency
Public awareness campaign on energy efficiency	N/a	Supporting program as part of Intelligent Energy for Europe: In implementation
Programme for voluntary action on motors (Motor Challenge)	30 <sup>(18)</sup>	Supporting programme for voluntary action on efficient motor systems
Public procurement	25-40 <sup>(14)</sup>	EU Handbook developed for guidance for increased energy efficient public procurement
<b>TOTAL in implementation</b>	<b>169-199</b>	

## Transport

Policies and measures 'Transport'	Emission reduction potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable / comments
Community strategy on CO <sub>2</sub> from passenger cars (including voluntary commitment (VC) of car manufacturers' associations)	Total <b>107-115</b> Of which VC: <b>75-80</b> <sup>(14)</sup>	VC: monitoring; review ongoing Labelling: in force Communication on fiscal measures: in implementation Directive on taxation of passenger cars: in preparation
Framework Directive Infrastructure use and charging	Not known	In implementation, in relation to heavy duty road transport only; amending "Eurovignette" Directive is now proposed <sup>(19)</sup>
Shifting the balance of transport modes	Not known	Package of measures in implementation
Fuel taxation	Not known	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
<b>TOTAL in implementation</b>	<b>107 - 115</b>	

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

Policies and measures 'Industry'	Emission reduction potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable / comments
Regulation on fluorinated gases	<b>23</b> <sup>(20)</sup>	In force
IPPC & non-CO <sub>2</sub> gases	Not known	In force Review periodically

## Waste

Policies and measures 'Waste'	Emission reduction potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation / timetable / comments
Landfill Directive	<b>41</b> <sup>(14)</sup>	In force
Thematic strategy on waste	Not known	Launched December 2005 <sup>(21)</sup>

## Integration Research & Development

Policies and measures	Emission reduction potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable /comments
R&D framework Program	n/a	In force 6 and 7 Framework Programme for research and development. Includes support for R&D in the fields of energy, transport and climate.

## Integration Cohesion Policy

Policies and measures	Emission reduction potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable /comments
Integration climate change in structural funds & cohesion fund	n/a	For the new budgetary period 2007-2013 sustainable transport, adaptation, renewable energy and energy efficiency have been identified as eligible areas for support

## Agriculture

Policies and measures 'Agriculture'	Emission reduction potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable /comments
Integration climate change in rural development	N/a	In force
Support scheme for energy crops	N/a	In force
CAP Reform	<b>19</b>	CAP reform of 2003: 1) Decoupling: change support to farmers towards direct aids decoupled from production quantities with the effect of reducing incentives to intensify production; 2) "Cross-compliance": links direct payments to farmers to their compliance with EU environmental and other legislation and a set of good agricultural and environmental conditions (GAEC) aimed at protecting soil resources and enhancing farmland sink capacity.
Improve N fertiliser efficiency and reduce N <sub>2</sub> O from agricultural soils	<b>10</b>	1) Improved implementation of the Nitrates Directive, setting rules, for instance, on fertiliser use, manure storage and application methods. 2) Possibility for support to emissions reduction measures through Rural development programmes, such as: <ul style="list-style-type: none"> <li>• support for investments on equipment for better application of fertilisers,</li> <li>• agri-environment measures (e.g., reduction of N inputs),</li> <li>• support for afforestation of farmland</li> </ul>
Reduction of CH <sub>4</sub> and N <sub>2</sub> O from animal manure (Anaerobic digestion)	<b>1.7</b>	Possibility for support through Rural development programmes: <ul style="list-style-type: none"> <li>• support for investments in manure storage facilities and equipment for better application of manure,</li> <li>• support for Anaerobic digestion facilities</li> <li>• agri-environment measures (e.g., extensification of livestock)</li> </ul>

## Forests

Policies and measures 'Forests'	Sequestration potential by 2010 in EU-15 (Mt CO <sub>2</sub> -eq.)	Stage of implementation /timetable /comments
Afforestation and reforestation: - Afforestation programmes - Natural forest expansion	14 <sup>(14)</sup>	Possibility for support through measures for forestry scheme of afforestation of agricultural land and reforestation under the rural development programmes
Forest management (various measures to enhance carbon sink pool, such as continuous forest cover, special regeneration systems)	19 <sup>(14)</sup>	Possibility for support through forestry-environment scheme measures of rural development programmes; uptake of measures, dependent on national implementation.
Restoration of forests damaged by natural disasters, fires, pests damage, and forest fire prevention actions		Possibility for support through rural development programmes, specific measure for restoring forestry potential and introducing prevention actions

**Table 10: Key figures of the emissions trading scheme for 2005 to 2007**

EU-27 Type of installations		Average 2005/2007				
		Number of installations	Allocated allowances	Verified emissions	Difference between allocation and verified emissions	
			[1000 EUA <sup>(1)</sup> ]	[kt CO <sub>2</sub> ]	[1000 EUA]	[%]
1	Combustion installations	7008	1 503 072	1 501 109	-29 075	0%
2	Mineral oil refineries	155	164 757	154 325	6 241	6%
3	Coke ovens	20	22 789	20 856	1 963	8%
4	Metal ore roasting or sintering	27	20 504	18 389	10 432	10%
5	Production of pig iron or steel	232	173 323	141 805	1 933	18%
6	Production of cement clinker or lime	518	191 995	182 839	2 115	5%
7	Manufacture of glass incl. glass fibre	404	22 598	19 995	31 518	12%
8	Manufacture of ceramic products	1119	18 418	14 987	9 156	19%
9	Production of pulp, paper and board	794	37 608	29 894	2 603	21%
99	Other activity opted-in	398	425	293	3 431	31%
All installations		<b>10 675</b>	<b>2 155 489</b>	<b>2 084 492</b>	<b>70 996</b>	<b>3 %</b>

**Notes:**

(1) EUA=European Union Allowance

(2) Exact numbers show small variations through time, due to new entrants, closures, corrections and other reasons. Bulgaria and Romania only entered the EU ETS in 2007, data for Romania are for 2007 only.

**Source:** Community independent transaction log (CITL) (29 May 2008).

**Table 11: Overview of 2<sup>nd</sup> NAPs and estimated emission reductions**

Member State	ETS share in total GHG emissions 2006	2005/2007 verified emissions	Proposed cap 2008-2012	Cap allowed 2008-2012 (relative to proposed)	Additional emissions in 2008-2012 <sup>(1)</sup>	(Cap allowed - additional emissions - avg.2005/2007 emissions)/base year emissions	JI/CDM limit 2008-2012
Austria	35%	32.5	32.8	30.7	0.4	-2.8%	10.0 %
Belgium	40%	54.3 <sup>(1)</sup>	63.3	58.5	5.0	-0.5%	8.4 %
Bulgaria	51%	40.6 <sup>(2,3)</sup>	67.6	42.3	n.a.	1.3%	12.6 %
Cyprus	53%	5.2	7.1	5.5	n.a.	3.4%	10.0 %
Czech Republic	56%	84.5	101.9	86.8	n.a.	1.2%	10.0 %
Denmark	49%	30.4	24.5	24.5	0.0	-8.5%	17.0 %
Estonia	64%	13.3	24.4	12.7	0.3	-2.1%	0.0 %
Finland	56%	40.1	39.6	37.6	0.4	-4.1%	10.0 %
France	23%	125.8	132.8	132.8	5.1	0.3%	13.5 %
Germany	48%	474.0	482.0	453.1	11.0	-2.6%	20.0(c) %
Greece	54%	71.3	75.5	69.1	n.a.	-1.6%	9.0 %
Hungary	33%	26.1	30.7	26.9	1.4	-0.5%	10.0 %
Ireland	31%	21.7	22.6	22.3	n.a.	1.1%	10.0 %
Italy	40%	221.7	209.0	195.8	n.k.(4)	-5.0%	15.0 %
Latvia	25%	2.8	7.7	3.4	n.a.	2.3%	10.0 %
Lithuania	28%	6.3	16.6	8.8	0.1	4.9%	20.0 %
Luxembourg	20%	2.6	4.0	2.5	n.a.	-0.8%	10.0 %
Malta	62%	2.0	3.0	2.1	n.a.	4.6%	10.0 %
Netherlands	37%	78.9	90.4	85.8 <sup>(7)</sup>	4.0 <sup>(7)</sup>	1.4%	10.0 %
Poland	50%	207.4	284.6	208.5	6.3	-0.9%	10.0 %
Portugal	40%	33.5	35.9	34.8	0.8	0.8%	10.0 %
Romania	44%	69.6 <sup>(2)</sup>	95.7	75.9	n.a.	2.3%	10.0 %
Slovak Republic	52%	25.2	41.3	32.6	1.7	7.9%	7.0 %
Slovenia	43%	8.8	8.3	8.3	n.a.	-2.5%	15.8 %
Spain	41%	183.0	152.7	152.3	6.7 <sup>(5)</sup>	-12.9%	20.0 %
Sweden	30%	19.4	25.2	22.8	2.0	1.9%	10.0 %
United Kingdom	39%	244.5 <sup>(6)</sup>	246.2	246.2	39.5	-4.9%	8.0 %
<b>EU-15</b>	<b>40%</b>	<b>1633.2<sup>(6)</sup></b>	<b>1636.5</b>	<b>1568.8</b>	<b>74.9</b>	<b>-3.3%</b>	<b>-</b>
<b>EU-27</b>	<b>39%</b>	<b>2125.1<sup>(6)</sup></b>	<b>2325.3</b>	<b>2082.6</b>	<b>84.7</b>	<b>-2.2%</b>	<b>-</b>

**Notes:**

This is due to new entrant reserves, closures and other cases where EU allowances (EUA) are not allocated to specific installations.

(0) The figures indicated in this column comprise emissions from installations that come under the coverage of the scheme in 2008 to 2012 due to an extended scope applied by the Member State and do not include new installations entering the scheme in sectors already covered in the first trading period.

(1) Including installations which Belgium opted to exclude temporarily from the scheme in 2005.

(2) Due to the recent accession of Bulgaria and Romania to the EU, their 2005 emissions were not independently verified.

(3) The value represents the verified emissions of 2005. It was taken from the Commission summary information table.

(4) Italy has to include further installations. The amount of additional emissions is not known at this stage.

(5) Additional installations and emissions of over 6 million tonnes are already included as of 2006. Emissions from these installations were not included in the column 'verified emissions 2005-2007'

(6) Verified emissions for 2005 do not include installations which the UK opted to exclude temporarily from the scheme in 2005 but which will be covered in 2008 to 2012 and are estimated to amount to some 30 Mt.

(7) In the final Dutch NAP II (16 May 2007), these values are increased by 0.935 MT due to 36 additional installations that are included in NAP II

**Source:** CITL (29 May 2008); European Commission 2007.

**Table 12: Planned government use of the Kyoto mechanisms**

Member State	Planned use of Kyoto mechanisms	Type of Kyoto mechanisms (ET, CDM, JI)	Achievement of Kyoto target planned through domestic action only	Projected emission reduction 2008-12 through the use of Kyoto mechanisms [Mt CO <sub>2</sub> equivalent per year]	Budget [Mio €]
<b>Austria</b>	Yes	Jl, CDM, ET	No	9.0	531.0
<b>Belgium</b>	Yes	Jl, CDM, ET	No	7.0	104.0
<b>Bulgaria</b>	No	-	Yes	-	
<b>Cyprus</b>	No	-	Not applicable <sup>(a)</sup>	-	
<b>Czech</b>	No	-	Yes	-	
<b>Denmark</b>	Yes	Jl, CDM, ET	No	4.2	152.0
<b>Estonia</b>	No	-	Yes	-	
<b>Finland</b>	Yes	Jl, CDM, ET	No	1.4	121.0
<b>France</b>	No	-	Yes	-	
<b>Germany</b>	No	-	Yes	-	23.0
<b>Greece</b>	No	-	Yes	-	
<b>Hungary</b>	No	-	Yes	-	
<b>Ireland</b>	Yes	Jl, CDM, ET	No	3.6 <sup>(b)</sup>	290.0
<b>Italy</b>	Yes	Jl, CDM, ET	No	20.7	78.8
<b>Latvia</b>	No	-	Yes	-	
<b>Lithuania</b>	No	-	Yes	-	
<b>Luxembourg</b>	Yes	Jl, CDM, ET	No	3.6 to 4.3 <sup>(c)</sup>	400.0
<b>Malta</b>	No	-	Not applicable <sup>(a)</sup>	-	
<b>Netherlands</b>	Yes	CDM, Jl, ET	No	13.0	505.0
<b>Poland</b>	No	-	Yes	-	
<b>Portugal</b>	Yes	Jl, CDM, ET	No	5.8	354.0
<b>Romania</b>	No	-	Yes	-	
<b>Slovakia</b>	No	-	Yes	-	
<b>Slovenia</b>	Yes	Jl, CDM, ET	No	< 0.6 <sup>(b)</sup>	
<b>Spain</b>	Yes	Jl, CDM, ET	No	57.8	383.6
<b>Sweden</b>	No	(Jl, CDM)	Yes	-1.3 <sup>(d)</sup>	8.7
<b>United</b>	No	-	Yes	-	
<b>EU15</b>	<b>Yes</b>	<b>Jl, CDM, ET</b>	<b>No</b>	<b>126.5</b>	<b>2951</b>
<b>EU27</b>				<b>127.1</b>	<b>2951</b>

**Notes:**

(a) Cyprus and Malta are non-Annex I Parties to the Kyoto Protocol and do not have an emissions target for the period 2008-12.

(b) The value for projected emissions reductions through the use of Kyoto mechanisms depends on the actual development of emissions, especially in the transport sector.

(c) Luxembourg: The range of projected emissions reductions through the use of Kyoto mechanisms results from different projection scenarios ("pessimistic" or "optimistic") with respect to the transport sector, which represented about 55% of Luxembourg's total greenhouse gas emissions in 2006 (excl. LULUCF)

(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 1.3 Mt CO<sub>2</sub>-eq/yr through the Swedish CDM and JI programme. This figure has not been considered in the target assessment for Sweden and the EU-15.

The exchange rate US\$ per Euro was assumed to be at 1.5.

**Source:** Questionnaires submitted under the EC greenhouse gas Monitoring Mechanism; European Commission Decisions on the second national allocation plans under the EU ETS; Second national allocation plans by countries.

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

	Article 3.3	Article 3.4			Total
	Net carbon stock change during 2008–12 [million tonnes CO <sub>2</sub> per year]	Election of activities <sup>(1)</sup>	Net carbon stock change during 2008–12 [million tonnes CO <sub>2</sub> per year]	Maximum allowance for forest management [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	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	-1.2
Denmark	- 0.262	FM, CM, GM <sup>(1)</sup>	FM: - 0.18 CM: - 1.82	- 0.18	-2.3
Estonia	No estimates	None	n.a.	n.a.	n.e.
Finland <sup>(4)</sup>	+ 1.9 to + 2.4	FM	- 2.5 to - 3.0	- 0.59	-0.6
France	- 0.84	FM	- 67.63	- 3.23	-4.1
Germany	No estimates	FM	- 7.3	- 4.55	-4.5
Greece	- 0.90	FM	- 2 to - 4	- 0.33	-1.2
Hungary	Not reported	FM	Not reported	- 1.06	n.e.
Ireland	- 2.07	None	n.a.	n.a.	-2.1
Italy	- 15.1	FM	- 10.2	- 10.19	-25.3
Latvia	Not reported	FM	Not reported	- 1.25	n.e.
Lithuania	No estimates	FM	No estimates available	- 1.03	n.e.
Luxembourg	Not reported	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.	-0.1
Poland	Net sink	FM	Likely larger than max. allowance	- 3.01	-3.0
Portugal	- 3.36	FM, CM, GM	FM: - 0.8 CM & GM: -	- 0.81	-4.7
Romania	Not reported	FM, Revegetation	Not reported	- 4.03	n.e.
Slovakia	Net sink	None	n.a.	n.a.	n.e.
Slovenia	- 0.36	FM	- 1.32	- 1.32	-1.7
Spain <sup>(2)</sup>	Not estimated	FM, CM	Not estimated	- 2.46	-5.8
Sweden	Probably small net debit	FM	Likely larger than max. allowance	- 2.13	-2.1
United Kingdom	- 2.68	FM	-1.69	- 1.36	-4.0
<b>EU15</b>	<b>-23.87</b>		<b>-25.68</b>		<b>-57.5</b>
<b>EU27</b>	<b>-24.23</b>		<b>-31.17</b>		<b>-63.4</b>

**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.

<sup>(1)</sup> FM: forest management; CM: cropland management; GM: grazing-land management.

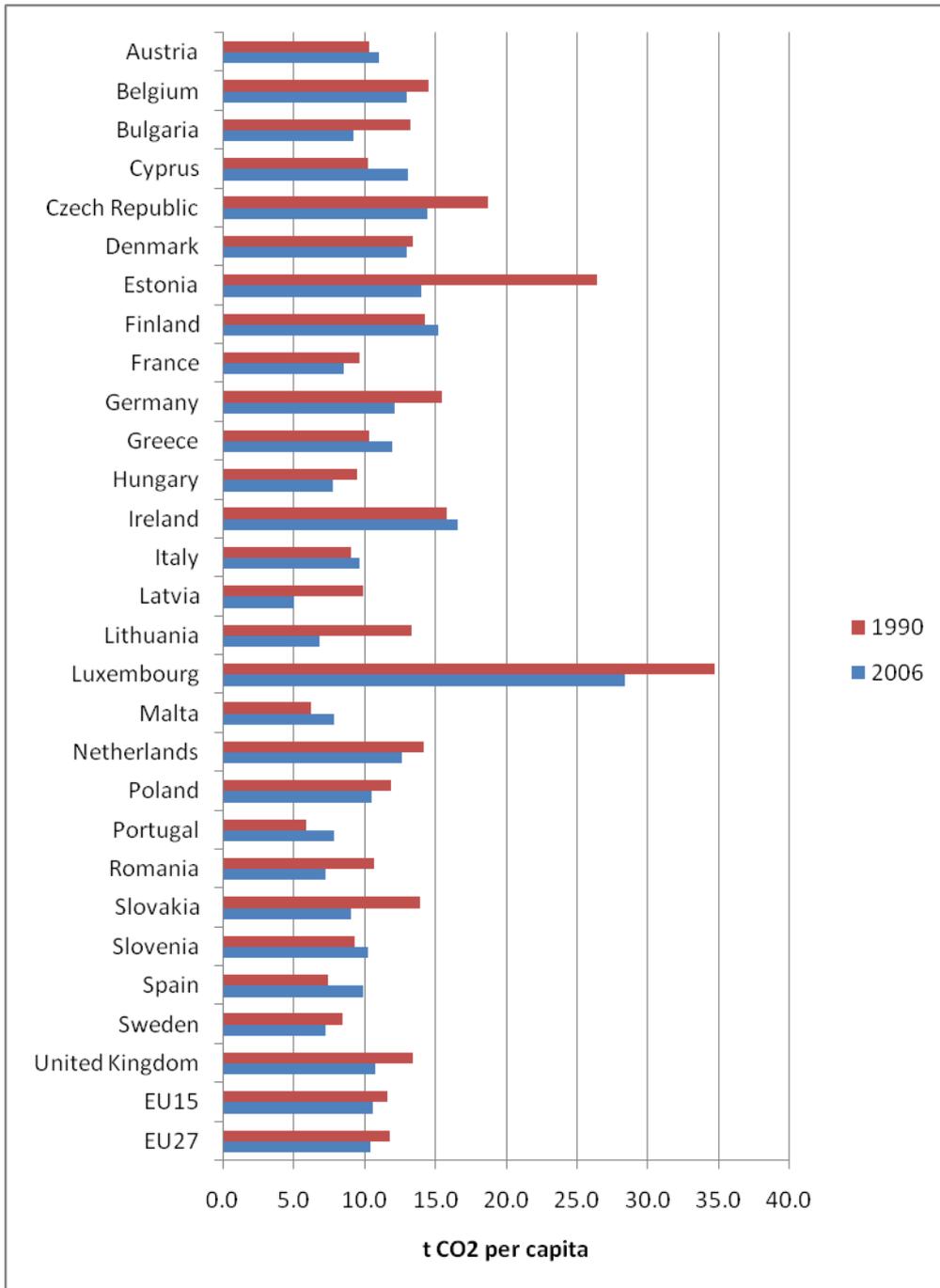
<sup>(2)</sup> Spain only estimated the aggregated reductions of Articles 3.3 and 3.4 together.

<sup>(3)</sup> The totals for Art. 3.3 and 3.4 do not include Spain.

<sup>(4)</sup> 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 removals from forest management are projected to exceed the sum of emissions under Art. 3.3. and the maximum allowance for forest management.

**Source:** Questionnaires submitted by Member States, The European Community's initial report under the Kyoto Protocol (EEA Technical report No 10/2006); Second national allocation plan under the EU ETS of Italy; 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 1: Greenhouse gas emissions per capita of EU-27 Member States for 1990 and 2006**



## Technical notes

- (1) 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. ...”. In 2006, it was decided to postpone a decision on this until after all community and MS initial reports have been reviewed under the Kyoto Protocol.
- (2) 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 1990–2006.
- (3) Based on Member State (MS) submissions until May 31st.
- (4) This corresponds to fuel consumption of 4.5 litres per 100 km for diesel cars and 5 l/100 km for petrol cars.
- (5) COM(2007) 18
- (6) COM(2008) 16 final
- (7) COM (2008)17 final
- (8) COM(2008) 19 final
- (9) COM(2008) 13 final
- (10) COM (2008) 18 final
- (11) COM(2007) 723 final
- (12) Please note that no data for Bulgaria is included yet, data for Romania are for 2007 only.
- (13) 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’).
- (14) Second ECCP progress report April 2003  
[http://europa.eu.int/comm/environment/climat/pdf/second\\_eccp\\_report.pdf](http://europa.eu.int/comm/environment/climat/pdf/second_eccp_report.pdf)
- (15) COM(2004)366 – final “The share of renewable energy in the EU, May 2004
- (16) COM(2005) 628 final “Biomass Action Plan, December 2005”
- (17) COM(2004)366 – final “The share of renewable energy in the EU, May 2004
- (18) COM(2006)545 – final “Action Plan for Energy Efficiency: Realising the Potential”
- (19) COM (2008) 436 final
- (20) COM(2003) 492 final
- (21) COM(2005) 666 and 667 final "Thematic Strategy on Waste Prevention"