Air pollution, greenhouse gas emissions: monitoring mechanism and implementation of the Kyoto Protocol

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This Commission Staff Working Document accompanies the Commission communication as regards 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).

The report gives a **detailed analysis of emission trends in the main sectors**:

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 CO2 in the EU-27 in 2010. Most reductions will result from actions in the energy and industrial sectors. Emission reduction potentials for energy policies have stayed relatively constant since 2006 for the EU-15. 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. 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.

Transport: all three car associations reduced the average specific CO2 emissions of their cars registered for the first time on the EU market in 2005 compared to 2006. Overall, average specific CO2 emissions from new cars in the EU-15 -were equal to 160.4 g CO2/vehicle-km in 2006. In order to meet the EU's final target of 120 g CO2/km, **additional efforts are necessary**. CO2 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%). CO2 emissions from road transport increased by 25% between 1990-2006. 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. 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.

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 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.

In the EU-27, decreases in mineral and organic (manure) nitrogen fertiliser use and the efficiency improvements of farming practices, are likely to reduce N2O 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. 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.

Industrial processes: policies and measures are mainly aimed at abatement measures in adipic and nitric acid production (to reduce N2O 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. Emissions from industrial processes are projected to remain at the current level of 12% below 1990 levels. 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.

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 CO2-eq. in 2010). 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.