Air pollution: scheme to monitor the average emissions of carbon dioxide CO_2 from new passenger cars

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In accordance with Decision (EC) 1753/2000, the Commission shall submit annual reports based on the monitoring of the CO2 emissions from new passenger cars in the EU. This report concerns the monitoring data for 2009.

All Member States have submitted data for new passenger car registrations for 2009. In comparison to the reports in previous years, the aggregated data in this report refer to all fuels (previously only figures with respect to petrol and diesel were reported) and, in contrast to earlier reports, the CO_2 emissions figures are not corrected by 0.7%.

The main observations made in the report are the following:

Average CO_2 emissions from new passenger cars (2009):

the average specific CO_2 emissions of new passenger cars registered in the European Union in 2009 were **145.7 gCO_2/km**. This represents a decrease by 5.1%, or 7.9 gCO_2/km, from the previous year (153.6 gCO_2 /km in 2008) which is the largest relative drop in specific emissions since the beginning of the monitoring scheme. Some of this reduction may be due to the financial and economic crisis as well as to the design of the scrappage schemes implemented in several Member States;

- the data also indicate that there has been some **downsizing of the car fleet**, as the average engine power, vehicle mass and engine capacity slightly decreased in 2009;
- **diesel powered vehicles** improved by nearly 6 grams, petrol powered vehicles improved by almost 9 grams and AFV vehicles by slightly more than 11 grams in 2009. The difference among new diesel and petrol vehicles decreased to around 2.3 grams. It is worth noting that, 10 years ago, there was more than 17 grams difference between new gasoline and diesel vehicles;
- the proportion of **new petrol cars** surpassed that of diesel vehicles in 2009. In 2009, the share of AFV increased significantly. This is mostly due to the increase of petrol-LPG vehicles registered in Italy, which itself accounts for 92.8% of all new petrol-LPG passenger cars registered in EU27;
- the **EU15** accounts for the vast majority of new passenger car registrations (94.6% in 2009). New cars in the EU15 are on average emitting 9 gCO_2/km less than new cars in the EU12 (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Bulgaria and Romania). However, it is not clear at this stage if this can be attributed to a permanent behavioural change of citizens in the EU15, or if this is one of the effects of the financial and economic crisis which started in 2008.

Other car characteristics: engine power, engine capacity and mass:

- **the average engine power** of new diesel and petrol powered passenger cars had been increasing until 2007, it remained constant in 2008 and decreased in 2009. The average engine power of petrol powered vehicles decreased by 4 kW and offset the observed growth during last 7 years. Diesel

powered vehicles decreased only by 2 kW to the levels of 2006. The 2009 data for the average engine power of AFV confirm the decreasing trend of previous years. The huge influence of petrol-LPG vehicles in Italy is the main driving factor for determining the average engine power of AFV;

- **the average engine capacity** of new passenger cars in 2009 has seen a significant drop in 2009 by 83 cm^3. Petrol powered vehicles observed the highest decrease (by 5% or by 77 cm^3). The decrease in engine capacity of diesel powered vehicles is continuing and amounts to 37 cm^3 in 2009 (-2%). The engine size difference between petrol and diesel powered vehicles was decreasing until 2005 when it reached 313 cm^3 and since then it is widening again, and in 2009 the difference reached 378 cm^3;
- the **average mass of new passenger cars** registered in the EU in 2009 decreased by 36 kg. The difference between petrol and diesel vehicles has been increasing slowly but constantly since 2004 (226 kg) and in 2009 it reached 292 kg. The average mass decreased by 10 kg for diesel vehicles in 2009. On the other hand, new petrol powered vehicles became on average lighter by 22 kg and alternative fuel vehicles by 68 kg. The observed decreases are mainly due to a consumer shift to smaller segments of vehicles (known as A and B segment).

Monitoring data by automobile manufacturers' associations: in 2009, CO_2 emissions from new passenger cars decreased for each association. In comparison to 2008, ACEA decreased its average emissions by 7.3 grams, JAMA by 11.2 grams, KAMA by 9.7 grams and other manufacturers on average by 18.4 grams. Both, KAMA and JAMA, had lower average emissions from new passenger cars in 2009 than ACEA while the situation was the reverse in 2007.

When comparing 2009 to 2008, there was an increase of 9.8% in registrations of KAMA, while at the same time the registrations of ACEA and JAMA fell by 2.2% and 7.4% respectively. ACEA is still, by far, the major player on the European market, keeping its share at around 81% of all new registrations for the last 5 years.