ENERGY AND ENVIRONMENTAL ASPECTS OF THE TRANSPORT POLICY

CLIENT: *Directorate General Internal Policies of the European Union*

YEAR: *2007*

DESCRIPTION OF ACTIVITIES

Objectives of the project

TRT Trasporti e Territorio was in charge of this study on behalf of the Directorate-General for Internal Policies of the European Commission in order to support European Parliament actions in the field of transport, energy and environmental policies.

The aim of this study was to identify economic and politically feasible measures able to significantly enhance energy efficiency and to reduce negative impacts of transport activities.

The results of the study are based on an in depth review of recent researches, projects, statistics, notes etc., with the following aims:

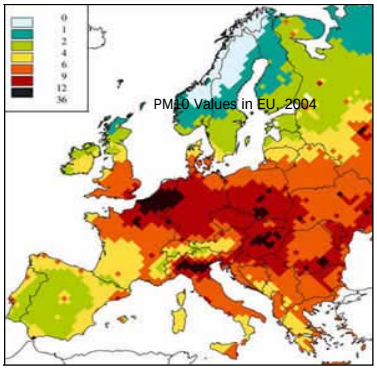
- the analysis of the volume and the impacts of the emissions caused by the different transport modes considering primarily atmospheric emissions (NOX, SO2, CO, PM10, PM2,5), greenhouse gases (GHG) and energy consumptions;
- the assessment of different policies suggested by literature to tackle the related problems paying specific attention to the transport sector dependence on non-renewable fuel sources.
- the identification of the most promising and cost efficient measures in the short, medium and long term, focusing on land transport and with particular consideration to technology developments.

Methodology and project structure

The study was divided in two parts.

Part I, dedicated to the analysis of technical databases, policy documents and scientific literature, takes into consideration quantitative and qualitative aspects related to:

- development of passenger and freight transport demand in EU 15 and EU 27;
- quantification of energy consumption and pollutant emissions (GHG and air pollution) by all modes of transport and different territorial areas;
- analysis of developments in vehicle technology and fuels;
- review of the policy documents on energy and environmental measures to reduce negative transport impacts (pollutant emissions and energy consumptions), which in turn distinguishes between the scrutiny of the EC policy action already in place and the suggestions from the scientific literature and national experiences.



PM10 in critical areas
Source: EEA 2006

Part II is devoted to the classification of the policies and to the presentation of advantages and disadvantages of the identified measures. The most promising policy measures from the point of view of cost effectiveness, feasibility and suitability is developed following the classification of measures into eight policy clusters and their analysis from different perspectives:

- the relevance of the expected impacts;
- the time horizon for the policy implementation;
- the reference area where the policy applies;
- the concerned institutional level;
- the stakeholders involved and the cost effectiveness.

Policies and final recommendations

The literature review and the analysis of a best practice strongly support the point of view that to achieve substantial reductions in transport emission it is necessary to combine mutually supporting policies, involving a variety of stakeholders.

It seems to be a general agreement that individual policies will not significantly contribute to reduce CO2 emissions and improve air quality, and that only combined polices or policy mix including soft measures designed to raise awareness can.

Innovation technology (both on vehicles and on fuels) is considered the most promising and effective tool to reduce transport's pollution and GHG emissions in the long term.

Nevertheless, technology progress is not sufficient. In order to reach the ambitious target of the EU, it is necessary to support new technologies with a consistent package of accompanying measures.

The literature review shows that there is a general consensus on the implementation of three main policy packages:

- **technological improvements** concerning both vehicles (energy efficiency improvements, reduction in pollutants emissions) and fuels (development of petroleum alternatives, including 1st and 2nd generation bio-fuels, compressed natural gas, as well as – in the long run – advanced alternatives such as hydrogen fuel cells);
- **economic instruments** (pricing and taxation) based on polluters-pay principle and pay-as-you-go: road vehicle taxation reform, pricing interurban road (Eurovignette scheme based on weight and emissions classes), road pricing in urban area;
- **soft and eco-friendly measures**: transport demand management, logistics measures, ICT, able to optimise the use of private vehicles, improve the use of public transport as well as to promote behavioural changes.

Absolute variations of CO_2 (CO_2 eq),1990-2005 EU-15