

UPDATE AND FURTHER DEVELOPMENT OF THE TRANSPORT MODEL TREMOVE

CLIENT: *TML Leuven for the European Commission – DG Environment*

YEARS: *2008 – ongoing*

DESCRIPTION OF ACTIVITIES

Background

TREMOVE is a policy assessment model, designed to study the effects of different transport and environment policies in the European transport sector. This model estimates transport demand, modal shifts and vehicle stock renewal as well as emissions of air pollutants and welfare level for policies such as road pricing, public transport pricing, emission standards, subsidies for cleaner cars, and others. TREMOVE covers the period 1995-2030 and models both passenger and freight transport, for EU27 plus CH, NO, TR and HR.

Objectives

The aim of this project is to update and further improve the transport model TREMOVE with the latest available data (vehicle stock, fuel prices, taxation, mileages, vehicles-km, passengers-km, tonnes-km, etc.) and provide new baseline scenarios.

Project activities

The activities of the project are organised around three main tasks:

1. Updating the input database for TREMOVE, building on the outcomes of the FLEETS and EX-TREMIS projects, and other recent studies, reports and research literature.
2. Formulating two new baseline scenarios until the year 2030, one based on the updated data and TREMOVE model development as much as possible in line with its involvement in the iTREN-2030 and EC4MACS project and an alternative one.
3. Developing four sensitivity runs for each of the two baseline scenarios.

Methodology

As far as the first task is concerned, as first step the original FLEETS and EX-TREMIS data is made consistent to the structure of TREMOVE in terms of geographical coverage, vehicle type classification, etc. Second, where some data is not available in such two sources, additional information is collected or estimated on purpose (e.g. rail stock data for non EU countries is not included in EX-TREMIS). Third, where the new data is more detailed than the original TREMOVE input database, the latter is adapted to the new structure (e.g. new pollutants are available from EX-TREMIS).

In the second task, TREMOVE is re-calibrated according to the new data sets. The coherence of the baseline is obtained through a re-calibration of the parameters of the tools. This ensures the internal consistency of the modelling results within TREMOVE. Two scenarios are built:

- The Baseline scenario will contain all adopted legislation (directives in force).
- The Alternative scenario will contain all adopted legislation, plus all legislation proposed and at a final stage of preparation by the Commission - but not yet adopted.

To ensure consistency between TREMOVE and other projects the policies and legislation considered for the Baseline scenario are those selected in the iTREN-2030 Reference Scenario.

In the third task, sensitivity runs are carried out with reference to two key parameters: fuel/energy prices and economic activity (interpreted by GDP). For each of these two variables two alternative values are defined deviating from the value chosen for the two baseline scenarios: one fuel/energy price corresponding to a “high price scenario” and one price corresponding to a “low price scenario”, one GDP growth rate corresponding to a “fast growth” scenario and one corresponding to a “slow growth” scenario. The combination of these values (e.g. high price/fast growth, low price/slow growth) identify the input for the four sensitivity runs. The results of the sensitivity scenarios are finally checked and commented. If non-obvious results are detected, they are explained and different reactions for the two different baselines are highlighted.

Role of TRT

TRT is responsible for the update of input database related to the non-road modes of transport (rail, aviation, maritime) and co-operate to the development of the baseline and alternative baseline scenarios.

The consortium

Together with TML (Belgium), who leads the project and TRT, the consortium includes LAT (Greece)