



TREMOVE: past, present and future

Final TREMOVE Contact Group Meeting

Leuven (BE), 5-6 March 2007

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Impact Assessment of Transport Policies with TREMOVE



- **TREMOVE model: a basic tool for the Impact Assessment of transport-related policy proposals at EU level.**
 - Analysis of the economic and environmental impacts of transport and environment policies,
 - focusing on vehicle technologies / emission factors and economic instruments
- **History**
 - 1st version for Auto Oil II (1998-2000) (9 countries, road only)
 - KUL Contract: New version developed for CAFE and NEC (21 countries, all modes)
 - TML Contract: EU-27 + Candidates Countries, better user interface, more flexibility
- **The model is / will be used for:**
 - Euro 5/6 LDV, Euro VI HDV Emission standards, Truck retrofit
 - CO2+Cars Strategy Review and forthcoming regulatory proposal
 - Infrastructure charging (Eurovignette)
 - Fuel and vehicle taxation
 - Technical options for maritime pollution
 - Review White Paper Common Transport Policy



Problems



- **The development of the model and its use for CAFE, Euro 5 and CO2+Cars impact assessments revealed important problems:**
 - **model calibration with respect to available statistics**
 - Fleet statistics, fuel consumption, availability technologies
 - **Integration of TREMOVE in climate and air modeling/inventories not successful so far (Timetable inconsistencies, Consistent calibration of the models not achieved, lack of co-ordination between modelers**
 - **Lack of a strong political support including Member States. No established process for bilateral consultation**
 - **missing aspects in the reproduction of transport demand and supply that difficult the implementation of some policy scenario**



Independent Reviews of the model



- **Two projects were undertaken by external experts to provide an independent review of the model features:**
 - Scientific review of TREMOVE (MNP, IIASA, IEEP, Bio 2005/422235)
 - Review of vehicle choice (IEEP, COWI, ABRL 2006/423693)
- **Short term recommendations**
 - Scientific validation of the set of price elasticities and elasticities of substitution (EoS), and evaluation of the need to adapt transport demand module to better represent long-run elasticities.
 - Introduction of alternative transport baselines
 - Improvement of vehicle choice modeling for a more realistic inclusion of consumer discount rate.
 - Discussion of the plausibility of the results with stakeholders and users.
- **Medium/Long-term recommendations**
 - Focus further model development and scope on road transport policies, and better integration with other model with a larger scope and less detail.
 - Improved car choice model and a light-duty and heavy-duty vehicle choice model to support e.g. differentiated taxation or trading schemes.
 - Evaluation of a 'simple' forecasting module into TREMOVE to avoid the complexity of the current calibration process with an imported baseline



Short term improvements (new version 2.5)



- **Develop source code and software structure of TREMOVE (model speed, user interface)**
 - Allow the model to be used by a wide range of users.
 - Allow easily introducing transport baseline data from alternative sources,
- **Improve the dataset (ensuring best available level of detail and data quality)**
- **Extension of the scope of TREMOVE to EU-27, HR, TU (+CH, NO)**
 - Collection of publicly available data / proxies / scope for further improvements.
- **improve the structure of the model, so that behavioural responses are better reproduced in all modes.**
 - Take into account the conclusions of the independent review of the model + IEEP report on vehicle stock modelling
 - Organise ad-hoc seminars (Training, transport demand, evaluation policy runs)
- **Revised TREMOVE baseline scenario, up to 2030**
 - Including improved modelling of alternative fuels and power trains (CNG, H2)
- **Version 2.5 ready by 9 March 2007**



Objectives 2007



- **FLEETS project**
 - Focus on vehicle stock data. 1-year project launched in Dec 06. Combined use of the database with TREMOVE and COPERT 4 to improve and ensure consistency of transport emission calculations
- **Model maintenance and further improvement under a stable context, in cluster with air and energy models**
 - Joint Research Centre becomes the key place for model improvement (TREMOVE, TRANS-TOOLS, POLES). Administrative arrangement with DG ENV (defines priorities)
 - EC4MACS Consortium (LIFE+ funding 2006-2011) performs stakeholder consultation and baseline/scenarios for CAFE+ECCP reviews in 2011, with GAINS, PRIMES, TREMOVE, CAPRI, etc.
- **Still to be defined: how to transform the former « Tremove Contact Group » into an expert group on transport modelling**
 - Link/merge with CLRTAP Task Force on Emissions Inventories and Projections (TFEIP) and/or with DG TREN / Member States' Energy Economists Group
 - Exchange of info and common understanding on statistics & projections for transport demand, vehicle stock, emission factors, costs, etc. (EC / UNECE / EEA / Member States / Other models & research projects)



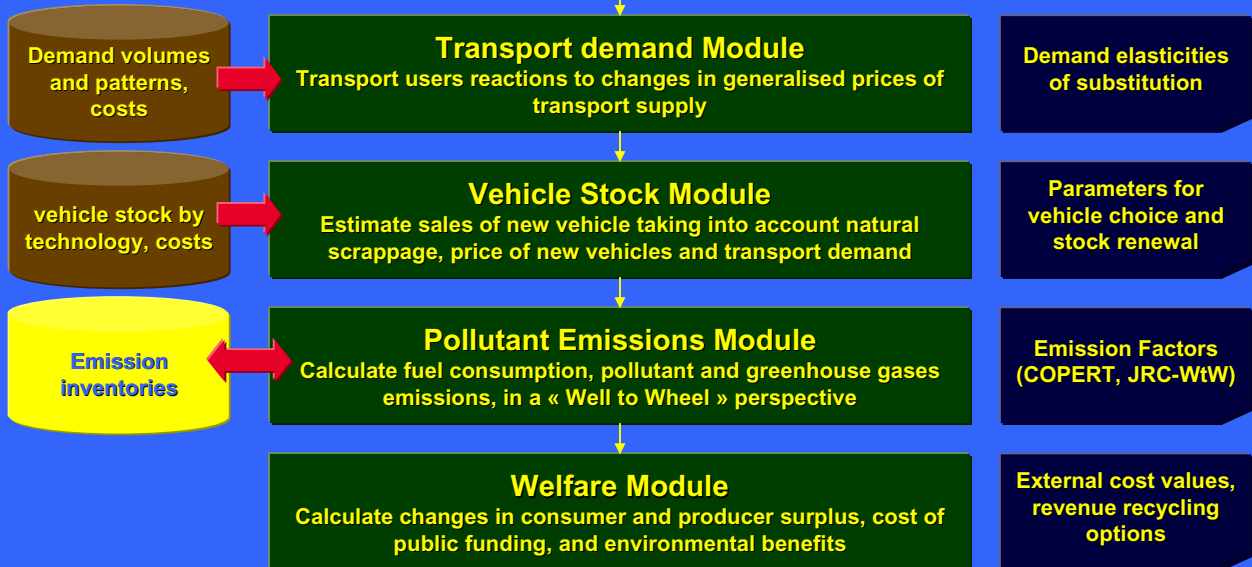
TREMOVE model structure and data needs



Data needs

Transport demand Baseline
Exogeneous: from DG TREN models or national baselines

Knowledge needs



Key questions for Day 2



- **Demand Module**
 - We need empirical evidences for the calibration of the current demand modelling
 - Where do EoS come from?
 - How to include feedbacks (e.g. motorisation, revenue recycling)?
 - What could be achieved through a simpler and more transparent demand module formulation (e.g. set of simultaneous equations)
- **How to improve Policy runs scenario definition and model output?**
 - Design of a clear and independent baseline (no embedded scenario data)
 - Adjustment of key modelling parameters (e.g. maintenance costs)
 - Easy introduction of scenario/variants, sensitivity analysis (e.g. on fuel price)
 - Management of output data volume
 - Comparison of scenarios
 - Understanding welfare impact
 - Comparison with ex-ante or back-of-the-envelope estimates (e.g. impact on vehicle price)