



## Further Development and Application of the TREMOVE Transport Model

TREMOVE Contact Group  
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## Objective of TREMOVE further development



- TREMOVE model was developed for 2nd Auto-Oil Programme
- It was assessed in 2001: recommended further development
- Objective : Make available to the European Commission services a transport model
  - environmental and economic analysis, up to 2020
  - different policies and measures to reduce the atmospheric emissions (incl. greenhouse gases)
  - all modes of transport (road, rail, aviation, maritime and inland waterways)
  - enlarged European Union (first step : 4 new M/S)



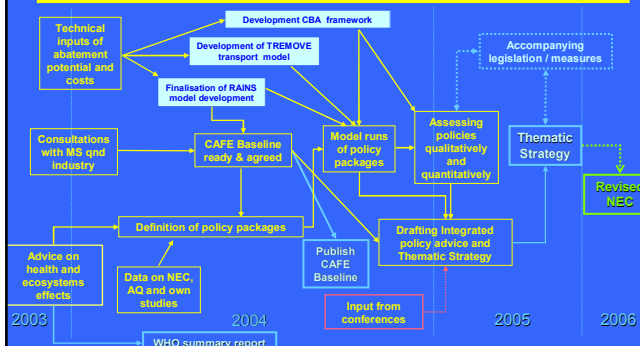
## C.A.F.E. Timeline



- TREMOVE 2 developed in the context of C.A.F.E.
  - Draft Baseline presented 17 May 2004
  - Integrated assessment modeling (RAINS model) operational as planned from September 2004 to run policy scenarios.
  - CBA framework will be in place and operational as from October 2004
  - TREMOVE operational from November 2004
  - Draft Thematic Strategy ready by April 2005
  - Adoption by the Commission July 2005



## Schematic outline of CAFE timeline



## The CAFE baseline projections show



- Significant downward trend in emissions of all main pollutants up to 2010 and beyond (to 2020)
- Relative contribution from road transport to overall emissions is diminishing (this may not be true in urban areas)
- Strong growth in the relative contribution to air emissions from shipping (SO2 and NOx) and aviation (NOx)
- Despite strong reduction in SO2 emissions, acidification of forests (in particular in central Europe) remains a problem because ammonia emissions from agriculture will not diminish.



## Indicative content of C.A.F.E. Thematic Strategy



### TREMOVE

- Consolidation of Air Quality Directives, possible modification of limit and target values
- Streamlining and simplification of monitoring and reporting
- "small" (less than 50 MW) combustion plants
- Reduction of VOCs emissions from petrol distribution
- Policy Statement - Measures to reducing agricultural air pollution (ammonia) ⇔ DG AGRI
- Euro 5 (passenger cars) and Euro 6 (trucks) to reduce NOx and PM, ⇔ DG ENTR.
  - PANEL QUESTIONNAIRE EURO 5 IN JULY
- Additional measures to reduce air pollution (NOx, SO2 and PM) from ships
  - STUDY TO BE LAUNCHED IN JULY
- Actions on urban captive fleets (e.g. retrofitting of buses) to reduce PM emissions (⇔ TREN)
  - WORKSHOP IN NOVEMBER
- Measures on existing vehicles in urban area (bans/congestion charging)
  - WORKSHOP IN JAN/FEB 2005 (tbc)
- Other (infrastructure charging, air transport, labeling, scrappage, etc.)



## Consistency between TREMOVE and RAINS baselines up to 2020



- TREMOVE uses more detailed activity data than PRIMES / RAINS (through the European network model SCENES)
  - TREMOVE and RAINS share common macro-economic assumptions.
- While transport volume projections are close for road transport, non-road demand forecasts still deserve a further work (rail freight, maritime)
- Fuel consumption 25% lower in TREMOVE by 2000 than PRIMES (and Eurostat)
  - gap increases by 2020 due to the large increase in diesel cars market share (while in PRIMES/RAINS the latter is constant between 2000 and 2020).



## Tremove Contact Group



- Lot 2: 3 meetings to discuss the baseline and the model structure
- Ad-hoc Group of Experts, build for Tremove Assessment
- 30/4/04 : Invitation sent to CAFE Baseline Stakeholder Group
  - Positive reply : 6 contributions so far
  - We need more!
- A further meeting in autumn to discuss policy options and Lot 3 organisation.



## Contact Group meeting 27-28 may



- Transport Demand
  - SCENES : a clear improvement since TREMOVE 1.3
  - Build a consistent baseline for SCENES
    - Take into account statistics 1995-2002 + existing forecasts
    - Inclusion of (official) national growth projections for its input assumptions (car ownership, user costs, load factors)
    - e-mail to C.A.F.E. Baseline Stakeholders Group (deadline 10/7/2004)
  - Clarify elasticities of substitution
  - Some substitutions not allowed (e.g. short sea shipping vs. rail or road)
- Vehicle stock . Further improvements planned for version 2.2 (October 2004)
  - Link with load factors, annual mileage
  - Improvement logit model (share diesel cars). How to introduce constraints in fuel and cars production. No a-priori objective.
  - Rail : diesel vs. electric
  - Aviation, Maritime : constant vehicle stock structure



## Today: Emission Factors



- TREMOVE 2.1 based on COPERT III emission factors (due to the delay of the ARTEMIS project)
  - Still some corrections to be performed (ACEA/LAT comparison with TRENDS)
- We are aware of the limitations of COPERT III
  - Fuel consumption : until Euro I only. Ad hoc modifications based on CO2&Cars Commission database
  - NOx, PM: Artemis not available before May 2005 but we can benefit from Cost-346 and interim reports.
  - Reach October 2004 deadline with a sound emission module.
- Further improvements
  - Lot 3 : Improve emission factors module (both fuel consumption and pollutants)
  - Focus on CO2+Cars Strategy review