

# **TREMOVE CONTACT GROUP MEETING LEUVEN, 17 JANUARY 2003**

## **MINUTES**

Recorded & edited: Griet De Ceuster, Bart Van Herbruggen

*Participants: see TREMOVE 17 Jan 03 Attendees.pdf*

### **1. Welcome and introduction**

*(by chairman Matti Vainio, European Commission)*

*9.30 – 9.55*

*Presentation: TREMOVE 17 Jan 03 Matti Vainio.pdf*

Matti Vainio welcomed everybody and introduced the TREMOVE project.

### **Questions & Answers**

- Markus Amann wanted to know the exact purpose of the meeting.  
Matti Vainio responded that the purpose of the first contact group meeting was to bring together those parties that are interested in the development of a multi-modal transport model at the EU level. Thus, the contact group should bring together other European modellers as well as modellers in Member States, as well as the main stakeholders from different transport modes and non-governmental organisations. During the first meeting the team would present the details of the work plan for the TREMOVE model development, and at the end of the meeting, it should be clear where the contract group members could add value in the development of the TREMOVE model. Likewise, the contact group meeting should aim at understanding how the TREMOVE model can eventually be used by the stakeholders, as it will be an "open source" model accessible through the web.
- Stefan Larsson would like to have all the presentations and the minutes of the meeting available on the website. -> The project team aims for maximum availability of documents etc. on the web.

### **2. Presentation of the TREMOVE project**

*(Stef Proost, Katholieke Universiteit Leuven)*

*9.55 – 10.35*

*Presentation: TREMOVE 17 Jan 03 Stef Proost.pdf*

Stef Proost presented the TREMOVE project

He also showed what TREMOVE cannot do by itself: land use policies and evaluation of specific infrastructure projects. The assessment of these policies requires the simultaneous use of a detailed Transport model (here SCENES) and TREMOVE. This possibility is foreseen.

### 3. Discussion on modelling approach and model scope

10.35 – 11.10

Matti Vainio asked the participants for their knowledge of (better) data that might be useful for the model – also asks for comments on Deliverable 1.

- Antonio Mattucci explained he wishes to see a stable framework for the project. Matti Vainio: If there is a need for formal consultations, then it is possible to create a working group for instance under the CAFE programme. The aim is to focus the work of the REMOVE contact group to technical issues regarding modelling and data. The aim is to restrict the REMOVE contact group to technical discussions on modelling and data.
- Antonio Mattucci has used REMOVE and pointed out that it is limited in modelling new technologies, e.g. fuel availability for CNG cars. Stef Proost answered that new technologies will be treated using a logit model.
- Stefan Larsson was favouring the cost effectiveness approach. It enables the transport sector to be compared with other sectors. However, he saw a danger that when the external costs of transport are included to REMOVE (i.e. the benefits of reduced emissions are included), and the results are used in another model, like RAINS, there is a risk of double counting, if the RAINS model results will be subsequently used as an input to cost-benefit analysis. Matti Vainio fully agrees with the points of ACEA on external costs and adds that in order to avoid double counting in the RAINS model, it should be possible to switch the calculation of external costs on/off in REMOVE. Stef Proost pointed out that although uncertain, external cost information can be very useful in policy selection certainly when these policies are geared to address externalities. One externality (congestion) is always included in the policy assessment via the values of time in the generalised costs. Other externalities can be used in an on/off mode.
- Stefan Larsson saw an extra intermodal mode: waterways-rail. Markus Liechti confirmed Stefan Larsson's point on rail-waterways.
- Stefan Larsson mentioned that value of goods, and volume of goods are far more relevant than the tonnage.
- Matti Vainio wondered whether 3 trip purposes and three freight categories (bulk, cargo, unitised) will be enough to model passenger and freight transport accurate. Stef Proost answered that in SCENES a more elaborate classification is used. In principle, each category in SCENES can be introduced in REMOVE, but the more categories, the more complex REMOVE and the higher the data needs. The choice for three classes is the result of a trade-off between detailed modelling and model complexity.

On new Member States:

- Katalin Tanczos wished to know what kind of co-operation is needed for the project: by support, other co-operation, providing data, through other projects, helping Hungary joining in?
- Stane Bozicnik advised to spread a list of data needed, indicating which data is important and missing.
- Matti Vainio pointed out that within one year EU15 will be EU25. The opportunity for working together towards a good model for us all is now. Basically the project team is not purely looking for data provision, but for co-operation. It might be wise to start off a new work group on the new Member States.
- Stef Proost proposed to provide them with a first draft of the data set – to be completed by the new Member States. Then the draft model will be build, including the baseline. The new Member States will then get the opportunity to run and test the model – and to give feedback. After completion of the model, some time will be spent policy runs in co-operation with the Member States. All countries get a copy of the model – it will also be available through the Internet.
- Arnaud Burgess wanted to know exactly what type of data is needed. Stef Proost: In the old model we used data for each country from different sources, with different quality. Now we will use structured data: SCENES, TRENDS and ARTEMIS data.

- Markus Liechti noted that the Technical University of Graz (Austria) might have useful data on the difference between testbench/driving-cycle emission measurements and real-world emissions of trucks.

**Coffee break**

11.10 – 11.20

**3. Discussion on modelling approach and model scope (cont.)**

11.20 – 11.25

- Jean-François Gruson wanted to know how the calibration and validation of TREMOVE will be performed. He was especially concerned about the update of the emission factors.
- Jørgen Jørgdal-Jørgensen was interested in strategy for updates of data. Stef Proost: when the baseline data changes, the model can be re-calibrated very fast.
- Stane Bozicnik made the point that TREMOVE should be one consistent model, not letting the possibility to adapt for different countries. Stef Proost answered that indeed the model structure remains the same, but the baseline will be different for every country.

**4. Transport demand baseline and transport costs**

*(Ian Williams, ME&P)*

11.25 – 12.30

*Presentation: TREMOVE 17 Jan 03 Ian Williams 1.pdf*

Ian Williams presented the SCENES transport model of Europe.

**Questions & Answers**

- Ina De Vlioger had a remark on the relation between the SCENES and TREMOVE baseline.
- Markus Amann wanted to know which assumptions for the 2020 network are made in SCENES. Ian Williams answered that SCENES network data will, in general, be collected from research by IRPUD (Dortmund University). IRPUD is expected to update the networks, based on current expectations w.r.t. network development (e.g. inclusion of expected Trans-European-Networks development).
- Arnaud Burgess wanted to know which new Member States were covered by SCENES. Ian Williams: New Member States are covered through the IASON project.
- Arnaud Burgess wanted to know how fiscal policies are modelled – is it necessary to go back to SCENES?
- Filip Lefebvre had a question on the use of observed flows: is the model calibrated with counts? Ian Williams: Calibration is not done on a road-by-road basis, but by looking back. See SCENES Deliverable 7.
- Stefan Larsson suggested that congestion on railroad networks should be modelled too. Ian Williams: Rail congestion is not well measured; there are no congestion curves. But there is an output on rail congestion: the level of usage.
- Tom Howes was concerned about the matching of the vehicle type categories in SCENES and TREMOVE. Ian Williams: Only one car type in SCENES, a single average car that varies from country to country. Stef Proost: TREMOVE will split the figures out into more types, using stock and mileage data available from the TRENDS databases. And consistency can be guaranteed by matching the average cost changes in SCENES and the aggregate of cost changes over vehicle types in TREMOVE
- Alain Henry: what SCENES output will be used for TREMOVE, what aggregation level?
- Stefan Larsson: how are the networks represented in SCENES? Ian Williams: The rail network is plus minus fully represented. Road only between significant urban areas or NUTS2 zones. Local traffic is

also modelled in SCENES, but not represented on a network. Angelo Martino added that also ports and terminals (thus loading, unloading, etc...) are included in the network.

- Matti Vainio: We might need to use GTAP tables, see [www.gtap.org](http://www.gtap.org), as a base for freight transport.

#### **4. Transport demand baseline and transport costs (cont.)**

*(Ian Williams, ME&P, Angelo Martino, TRT)*

*12.30 – 13.10*

*Presentation: REMOVE 17 Jan 03 Ian Williams 2.pdf*

Ian Williams presented the draft SCENES 2020 baseline scenario.

*Presentation: REMOVE 17 Jan 03 Angelo Martino.pdf*

Angelo Martino presented the data needs for SCENES and REMOVE.

#### **Questions & Answers**

- Graham Lock had a remark on N1 vehicles: statistics are not very good. Marco Ponti added that they are important, especially for urban pollution.
- Stefan Larsson: the cost of vehicle technology is important. ACEA does not have the figures, but we can get you in contact with the right persons in the car companies.
- Arnaud Burgess wanted to know how REMOVE will deal with international flows. Matti Vainio answered that it might be necessary to run SCENES again in some important cases.
- Alain Henry wanted to know how motorcycles and mopeds are modelled. Ian Williams pointed out that they are included in cars in SCENES. Stefan Larsson also mentioned the importance of this vehicle category. Stef Proost repeated that this category is included in the REMOVE II model.

#### **Lunch**

*13.10 – 14.30*

During lunch, one table made themselves useful discussing data provision from the new Member States. All new Member States that were present were very co-operative and helpful. Some discussion raised on the financing of their work. That question could not be solved during lunch.

Another group discussed stakeholder consultation procedures and the relation with CAFE.

Stef Proost draws the following conclusions:

1. CAFE group needs a first baseline to comment upon. This will initially be the PRIMES baseline from NTUA.
2. There will be reactions from different parties other than REMOVE
3. REMOVE group confronts the output of step 1 and step 2 with its updated SCENES baseline and produces an adapted baseline that has internal transport consistency (this means that it is the product of SCENES) and also transport energy consistency (this means checking with previous REMOVE model coefficients and previous PRIMES-KUL statistical work)

The result of this step is a provisional REMOVE baseline that has at least a minimum internal transport consistency.

The main advantage of this process is that it buys us some time for a provisional baseline and that the provisional baseline has transport consistency.

### 5. Vehicle stock data and emission calculation

(Mario Keller, INFRAS)

14.30 – 15.25

*Presentation: TREMOVE 17 Jan 03 Mario Keller.pdf*

#### Questions & Answers

- Ian Williams: the size of aircrafts is very important. Stef Proost: we need to model aircraft size, fuel efficiency, age distribution of planes, market of leasing planes, etc. Matti Vainio: aviation noise is also important.
- Markus Amann noted that income per capita is expected to increase rapidly in the accession countries. This might lead to increased scrappage rates. I.e. richer families will tend to scrap their old cars earlier.
- Stefan Larsson: new registration data is available; we have to have categories in road freight that are not available in TRENDS.
- Filip Lefebvre: to simulate policies we need to have age categories for trains and inland shipping too. Marco Ponti and Markus Liechti had the same opinion.
- Kari Mäkelä notified that the modelling of vehicle sales also needs to include the market of imported second hand cars – especially for the new Member States. Delia Dimitriu: this is also true for second hand airplanes. Stef Proost: The life time of vehicles is exogenous to the current model.
- Jacques Delsalle wondered if and how to model the impact on load factors. Stef Proost : The load factor could be modelled, e.g. split between 50 and 80% loaded truck – but only if enough data is available (similar for e.g. passenger air occupancy rates).
- Arthur Lieuwen: Eurocontrol has a project on aircraft emission modelling that might be helpful.
- Stefan Larsson: a study of NEA on trucks might be useful. Not tonnage is important but volume. A lot of trucks cannot load 100% because they drive part of the trip empty, e.g. garbage truck.
- Matti Vainio asked Arthur Lieuwen whether EUROSTAT will help in the data collection process. Arthur Lieuwen: Eurocontrol has projects on air fleets and emissions, they will provide data, however there are some limitations (e.g. market shares data is confidential and can not be delivered).

### 5. Vehicle stock data and emission calculation (cont.)

(Ian McCrae, TRL)

15.25 – 16.00

*Presentation: TREMOVE 17 Jan 03 Ian McCrae.pdf*

#### Questions & Answers

- Delia Dimitriu wanted to know how ozone was modelled. Matti Vainio: only emissions are modelled, the precursors of ozone - NO<sub>x</sub> and VOC - are included.
- Markus Amann recommended to set priority on some fields:
  - quantification of new technologies (Euro V – VI)
  - non exhaust PM emissions from road and rail
  - secondary emissions from electric trains
 Ian McCrae responded that:
  - an indication on future standards will be included
  - there are not very much studies on non exhaust PM, the PARTICULATES project will work on this issue. The level to which non-exhaust emissions will be included in TREMOVE depends to a certain extent on the outcomes of the latter project.
  - TREMOVE will not model secondary emissions

- Matti Vainio: there should be a switch in the model between the life cycle approach and the direct approach, as double counting in RAINS must be avoided (RAINS includes emissions from energy production). There should also be an on/off switch w.r.t. the calculation of non-exhaust emissions.
- Discussion on non-exhaust emissions in the metro. According to Stefan Larsson PM pollution is very high. Filip Lefebvre and Ian McCrae said that emissions are quite normal, but air quality is bad because of ventilation and other problems.
- Tom Howes suggested to contact Daniel Chiron on biofuels and new technologies for all modes.
- André de Palma wanted clarification on how aggregation of car speeds affects emission parameters. How much information is lost, what is the sensitivity? Ian McCrae explained that ARTEMIS uses typical driving cycles to obtain the figures. Matti Vainio then asked if there are correction factors for the different countries. Mario Keller explained that altitude and climate are also parameters for the emission factors. Ian De Vlieger added that the cold start emissions are very important.

**Coffee break**

16.00 – 16.30

**Feedback**

(Matti Vaionio, DG ENV)

16.30 – 17.00

- Matti Vainio asked for feedback on this meeting. All agreed that it was a very fruitful meeting.
- Concerning the follow up meetings all concluded that it would be important to focus the next meeting to specify topics. These were e.g. mode specific discussions, meetings with national modellers, focussing on the baseline assumptions, key parameters. Some also wished to have some general feedback moments.
- Matti Vainio and Kari Mäkelä pointed out that collecting data usually is more time consuming than the modelling itself. One could use Eurostat data, but certainly the Member States have much more data available. A problem is that local data is usual not centralised, and not in English. The TREMOVE team needs to establish a good working relationship with national modellers and data sources.
- Graham Lock made an important suggestion to start working with Member States to improve data on passenger and vehicle kilometres.
- Finally, Matti Vainio consulted the audience on whether data on the accession countries is available. Preliminary conclusions :
  - Hungary : data is available
  - Poland : data is available, but it is not collected by one instance. Different instances collect data per mode and this data is not presented in official statistics.
  - Slovenia : No-one from Slovenia was present, but Matti Vainio thinks they have data.
  - Estonia : Road : good data ; rail, air , shipping : less data.. Kari Mäkelä has worked on a transport air pollution model for the Baltic States.
  - Latvia : see Estonia.
  - Lithuania : data availability is unclear.
 Other Accession Countries were not discussed.

**6. Demonstration of the current TREMOVE model**

(Bart Van Herbruggen, TML)

17.00 – 17.20

*Presentation: TREMOVE 17 Jan 03 Bart Van Herbruggen.pdf*

Bart Van Herbruggen briefly presented the old model and some work that has been done with it.

## 7. Conclusions

*(Stef Proost, KUL)*

17.20 – 17.40

Conclusion on the composition of this group:

This group is a strong group of experts and many valuable comments resulted from the discussions. Stef Proost thanks the participants for their inputs. We have to complete this advisory group in a few directions: missing countries (Germany, Netherlands and some accession countries) as well as a few modes (rail and shipping)

Conclusions in terms of content:

- All participants are asked to have a look at Deliverable 1 (see [www.tremove.org](http://www.tremove.org)) and to give comments in the next two weeks. The project team will contact participants on an individual basis when their expertise is specifically needed.
- The load factors for trucks need to be analysed more accurately than in TREMOVE 1.
- Modelling of air/rail competition and the (non)importance of vehicle stocks for these two modes will affect the model development.
- Concerning inter modality, TREMOVE needs also to include rail-waterway connection (in addition to rail-truck and truck-waterway connections).
- Emission performance and costs of new fuels and new technologies needs to be looked into carefully.
- Emissions of imported old cars in accession countries as well as those Member State that have high taxes on vehicles.
- Some concern was raised about the quality of external costs estimates and the fact that there is a risk of double counting benefits if they are first calculated in TREMOVE and then again in the benefit assessment under the CAFE programme.

Conclusions added by Matti Vainio after the meeting:

- The inclusion of the knowledge from new Member States and national modellers from current Member States needs to be better integrated.
- As particulate matter will become the driver in health related aspects of CAFE the disaggregation of TREMOVE to appropriate vehicle categories needs further work, this relates both to light duty vehicles (predominantly diesel vehicles in cities) and large heavy duty vehicles (trailers/semitrailers which were modelled incorrectly in TREMOVE 1). Further the split of diesels in the passenger vehicle categories needs to be modelled correctly.
- The environmental performance of two-wheelers needs to be modelled well. Currently two-wheelers are not modelled separately in SCENES (that give the forecast as far as vehicle kilometres are concerned).

Extra remark added by Markus Amann:

- It is unclear how TREMOVE handles the fact that people are getting richer (about twice as rich from today to 2020) and how this relates to car ownership and scrapping and ultimately to vehicle stock. This is likely to be particularly important in new Member States which are expected to grow faster than the present Member States.

And by Stef Proost:

- As regards the impact of wealth on car stock, I think we can handle this in TREMOVE II. In the present version of TREMOVE the car stock itself is adapted in function of the carkm volume, the renewal of the desired car stock is a function of exogenous scrappage (technical failure and economic scrappage), the use of the car stock is a decreasing function of the age of the car. No used cars were imported or exported so that we did not need the model the second hand car market.
- The main bias I see in the present version is missing the export and import of used cars. This was less of a problem for the EU-15 it will become more important for EU-25

- In the new version we will pay attention to additional factors: longer technical lifetime of vehicles, possible faster turnover of car stock because of wealth effects and export-import of used cars. The greater income growth rate and its effect on car use is already taken on board in the baseline of SCENES. The propensity to renew car stock faster can be taken on board in economic scrappage factors.