TFEIP Transport Expert Panel

Meeting minutes (11 May 2017, Krakow)

Review of the workplan from the previous year

Presentation by the chairman.

- Copert 5
  - The work on Copert 5 is completed and Copert 5 is available.
  - There is special agenda item on Copert 5.
- Understanding of secondary PM formation understanding
  - This is an initiative started by the French colleagues (Ineris and CITEPA) and aims to get a better understanding of precursors.
  - Though the initiative failed in finding any funding it remains important from a scientific perspective.
  - National institutions who are looking into this matter or who have information about recent activities are requested to contact Prof. Leonidas Ntziachristos.
- Review of the Guidebook
  - Aviation has been added to the guidebook.
  - The revision of the other transport modes is continuous work in progress.
- Testing gridding of road transport data
  - Though the EDGAR tool initially considered gridding of transport emissions, they are now more focussing on gridding emissions from domestic heating.
  - The main difficulty is the method of allocating cold start emissions considering the urban areas with higher population densities.
  - National institutions who are looking into this matter or who have information about recent activities are requested to contact Prof. Leonidas Ntziachristos.

Shipping emissions

Presentation by Yvonne Pang (Ricardo) on the use of AIS data (Automatically Identification System) that was initially designed as an anti-collision system for better calculation and higher spatial resolution of shipping emissions.

- The main difficulty is cleaning the big amount of data (more than 2 billion messages to process each year).
- There are large differences between the different AIS data sources.
- The approach is currently only fuel used. A calibration to the fuel statistics (fuel sold approach) is envisaged.
- For ships going outside the AIS system range, the system makes an estimation of the route based on the exit and entry points. This approach delivers good results.
- The engine load is calculated from the speed of the vessel.
- The port activities (loading and unloading) is not included in the information from the AIS, but is estimated based on data from DfT.
- The work resulted in a better result in the Aberdeen area, representation of fishing activity and include data on smaller ships who are equipped with AIS.

- Germany, started in 2012 putting AIS info in the inventory; they are also struggling with the amount of data. Suggest to use 5min. 2 different sources, large differences between the data sets.
- The European commission is using AIS information for CO2 monitoring of ships.
- Using GPS data for the transport inventory could be an interesting recommendation for next year's expert panel.

Aviation emissions

Presentation by Robin Deransy/Mark Whiteley (EUROCONTROL) on their Advanced Emissions Model (AEM).

- The model uses the route elements of the operational flight plan that is transferred to EUROCONTROL for flow management purposes. The ABDS-B data is too large to be useful. The flight plan data are only used for the Climb/Cruise/Descent or En-route phases of flight. The fuel/emissions for Landing-and-Take-off phases of flight are based on the duration of each phases.
- The performance factor indicated on the flight plan is a commercial indicator and is not used for the inventory.
- The plane information is combined with data from another database with information on the engines.
- It is important to use the flight plan rather than the straight distance, because the flight plan also captures the changes in the system.
- The average taxi times are calculated per year and airport based on statistical analysis of taxi times as reported by airlines. The ICAO values are used when the average taxi time is not available (for some airports outside the EEA).
- Only the aircraft emissions are accounted for. The emissions from auxiliary power sources are not considered.
- It is proposed to align the calculation of NMVOC, TOG, OGs emission species with current EEA/EMEP Guidebook 2016 guidelines, and it seems that the recommended practice is to be aligned with the method developed by the US EPA.
- However, as the methane inhaled by the engine is completely burnt, there is basically no methane in the exhaust during, and consequently, NMVOC could be considered as equal to the mass of HC produced (for en-route emissions).
- A first version of the Web portal is under review and should be ready for September at the latest.
- 2016 Fuel and emission inventory data should be ready by the end of June.

Copert 5

Presentation by Prof. Leonidas Ntziachristos on the new version of Copert.

- Main changes
    - Possibility to run whole time series
    - Inclusion of the Tier 2 method that can also be used as a QAQC on the data input of the Tier 3 calculation

    - The possibility to cancel the calculation
    - The addition of “regions”
- Urban emissions are now split into peak and off-peak.
    - It corresponds to a selection of 2 different speeds (peak and off-peak) on the same emission function.
    - The default split is 50% peak and 50% off-peak, but this distribution can be modified.
- The reason for changing from engine size to vehicle segment is the downsizing of the engines.
- The motorcycles are now in the L-category vehicles because other L-category vehicles will be added.
- Methodology changes
    - The fuel consumption is now energy based (FC expressed in MJ/vkm)
    - The EGR temperature correction (applies to Euro 4, 5 and 6) can be significant in countries where the average temperature is below 15° C.
- Future developments:
    - Addition of uncertainty calculations.
    - Use of multiple emission factors for passenger cars.
        - Currently, there is one single emission function for all categories of passenger cars and only the parameters vary across the different segments (see excel file in the annexe of the Guidebook).
        - It has become clear that the emission control systems work in a different way (better) on expensive cars than on cheaper smaller cars.
        - It will be evaluated if there is a need of different emission factors for the different vehicle segments.

Next year work program

See last slide of presentation “2016/17 Workplan and reporting to Plenary”