PM status for 2013

Note: no separate PM status report the last two years

Main issues regarding the EMEP measurement program
Outline

- Status of PM levels in rural Europe in 2013
- Compliance with the monitoring strategy
- Development in data quality, reporting and database issues
- Work plan 2016-2017
PM concentrations, 2013

- Model and observational data were **below both the EU limit values** of 40 μg m⁻³ for the PM₁₀ annual mean, and the EU target value of 25 μg m⁻³ for PM₂.₅, except the values calculated for the Po Valley. The observational data, and to some extend the model calculations, **exceed however the WHO air quality guidelines** at several sites in Europe.

- Somewhat unfavourable meterology yielded higher air pollution over Central and South-Europe and EECCA countries in 2013. However, **emission reductions** resulted in annual mean concentrations over most of Europe being about **1-4 μg m⁻³ below the 2000-2011 average** according to the model.
Intensive measurement period
Mineral dust (µg/m³)

Mineral load: obtained by the addition of the SiO₂, Al₂O₃, Fe₂O₃ concentrations, and the dust contribution of Na₂O, K₂O dust, CaO and MgO after the subtraction of their marine contribution from the bulk concentrations.
For the individual sites, the agreement between calculated and measured dust concentrations is rather variable and depends mostly on the following factors:

- the quality of anthropogenic dust emissions (especially in cold periods),
- The models ability to calculate windblown dust (in warm dry periods)
- quality of meteorological input data
Implementation of monitoring strategy, level 1

Main components

Particulate matter

Ozone

Implementation index
Implementation of monitoring strategy, level 2

**Particulate matter**
- EC/OC (TC)
- Physical, optical properties
- Physical, optical + EC/OC

**Oxidant precursors**
- CH4
- VOC
- VOC + CH4

**Trace gases**
- CO
- Halocarbons
- Halocarbons + CO

**Heavy metals**
- Aerosol + precip
- Precip
- Aerosol

**POPs**
- Campaign
- Precip
- Air
- Air + Precip
Data reporting

- large volumes of data are reported late
- data submission has become more complex and challenging for the Parties
- CCC are developing more automatic data reporting and checking procedures
Summary monitoring strategy

Level 1

- Less than one third of the EMEP Parties have an implementation index exceeding 50%.
- 50% of Parties have improved since 2005 (implementation of aerosol measurements), while 30% have less monitoring presently than in 2005.

Level 2

- 47 sites reported at least one of the required EMEP level 2 parameters; however only 8 of these sites with complete aerosol program and 5 sites with the required oxidant measurements.
- Quality of data varies between Parties and components
QA/QC- Lab intercomparisons

- CCC has performed the usual annual intercomparsion of heavy metals and main ions (on internal funding)
- EC/OC and VOC in the framework of EU FP7 ACTRIS (and EMPA, DWD, Ispra) in cooperation with EMEP
Tracking data use is growingly important
Remarks on monitoring issues:

- EMEP is very well positioned to serve the community needs
- Monitoring is gradually becoming better though more complex
- Use of data increase

- However, there is an increasing need to profile EMEP to secure operations
- Technical development essential to not burden the data providers and CCC
Work plan 2016-2017 (I)

Improvement of the EMEP tools and knowledge

• Increase reporting of near real time data to strengthen EMEPs contribution to Copernicus and GEOSS

• Improve data reporting tools (automatic checks of file consistency, feedback to data originators etc)

• Continue development of EMEP observation database (the web interface) to include more statistical tools and plotting, provision of tools for data interpretation (trajectories etc).
Work plan 2016-2017 (II)

Cooperation with the Parties

• Assist Parties in implementation of monitoring strategy
• Workshop on data quality (autumn 2016)
• Intensive campaigns
  • POP passive measurement campaign (pending on external funding)
  • Aerosols (BC, VOC..?) collaboration with ACTRIS-2 (to be discussed)
• Assessments and interpretations of data
• Operationalize recommendations resulting from research activities like e. g. ACTRIS-2, GAW SAGs etc
Work plan 2015-2016 (III)

Cooperation with other projects and bodies (outreach)

• **Harmonized observations** and data management
  • Support WMO/GAW, AMAP, UNEP Stockholm, OSPARCOM and HELCOM related to atmospheric monitoring and data management

• **Strengthen and secure the visibility of EMEP observation data** when used by other international programs and conventions including research community, the EEA, WMO, UNEP and others.

• Outreach to secure **capacity building** and cooperation outside the UN-ECE region (EANET, Male Declaration, Africa...)

EMEP SB 2014