LRTAP Convention : lessons learnt

Laurence ROUÏL
Chair of the EMEP Steering Body
The Convention on Long range transboundary air pollution

- A UNECE convention established in 1979
- 51 Parties: Europe, USA, Canada
- 8 Protocols

- The 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol); amended in 2012 (PM2.5 and black carbon added)
- The 1998 Protocol on Heavy Metals; amended in 2012
- The 1994 Protocol on Further Reduction of Sulphur Emissions;
- The 1991 Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes;
- The 1988 Protocol concerning the Control of Nitrogen Oxides or their Transboundary Fluxes;
- The 1985 Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent;
A framework driven by an « effect approach »

- Actions driven by observed effects of air pollution on human health, vegetation, crops, materials, waters, forests, etc..
  - Implementation of a monitoring strategy for airborne concentrations and deposition
  - International Cooperative programmes (ICPs) dedicated to effects monitoring
- Science supported policy making
  - Strong interaction between the Executive Body which takes the decisions, WGSR which prepares the decisions and EMEP and WGE subsidiary bodies which provide scientific insights
- Agreed actions:
  - National emission ceilings,
  - Emission limit values for various installations,
  - Obligation to apply best available techniques,
  - Emissions and projections reporting obligation
Science-Policy interaction within the CLRTAP

- Evidence of harmful air pollution impacts
- Pollutants to be targeted and metrics
- Physico-chemical processes

- Revision of the legislation
- Development of co-operative frameworks for supporting new developments
- Amendment of the strategy with new scientific questions or priorities

- Obligations for monitoring air pollution and its impacts
- Obligation for reducing emissions
- Reporting

- Use of data reported for analysis of trends and air pollution patterns
- Interpretation of new insights or unexpected results
- Identification of new issues

- Obligations for monitoring air pollution and its impacts
- Obligation for reducing emissions
- Reporting
A binding instrument in the Convention

Parties have to report emissions and projections every year. In 2017 gridded emission reporting becomes mandatory (10km*10km grid resolution)

CEIP defines the technical framework for reporting activities, processes the data (QA/QC, gap filling… ), provides assistance to the Parties

Basic requirements that drive the process

- Comparability: common methodology, emission factors.
- Transparency: data and assumptions documented, expert reviews
- Accuracy and Completeness: gaps avoided and best estimates

Publication of the *EMEP/EEA emission inventory guidebook* which is the reference document

Review process organized in three stages, each country has to fulfill an in-depth review every 5 years (currently updated)
Emissions: lessons learnt

- A unique reference framework helps in achieving comparability of the data
  - Essential to sustain the modelling activity (including IAM)
  - Essential for the policy dialogue
- There are still huge uncertainties for some pollutants (HM, POPs, PM2.5) and Parties are encouraged to improve their data and technical support still expected/needed in some countries
- Revision of the review process which is actually very demanding (and expensive)
- Comparison with other emission inventories (developed for scientific purposes) should develop
To assess the impact of the protocols (monitoring)

To predict the impact of future emission control strategies (modelling)


- Location and number of monitoring stations suited for evaluation of transboundary fluxes and background air pollution;
- Long historical sets of observation data;
- Selection of measured parameters driven by scientific needs, stepwise approach;
- Quality assurance and comparability of the measurements ensured by the Chemical Coordinating Centre (CCC)
- All data gathered and available through the EBAS database ([http://ebas.nilu.no](http://ebas.nilu.no))
EMEP models

- EMEP models are developed by MSC-W (sulfur, nitrogen, ozone, PM compounds) and MSC-E (HM, POPs)
- Assessments and maps
- Impact of emission reduction scenarios
- Source-receptor (or blame) matrices used in IAM
- Reference models that need to be challenged to guarantee their relevance and accuracy, and build up confidence of the policy makers
- Comparison to observations
- Model intercomparison exercises (e.g. EURODELTA) with modelling teams in the Parties
- Model development supported by EMEP programme to include last scientific knowledge and future issues (e.g. BC)
- Data are available through the website (http://emep.int/mscw/index_mscw.html, http://www.msceast.org/)

Data are available through the website (http://emep.int/mscw/index_mscw.html, http://www.msceast.org/)
Very appropriate instruments to assess the impact of implemented policies: trends analyses


Monitoring network benefits from cooperations with other networks (even at the global scale)

Need to develop use of earth observations

Challenging EMEP models helps in their improvement

Multimodel approach has not been selected but can be option to deal with uncertainties and to involve more teams
The CLRTAP assessment report: a summary of the achievements

- Published in June 2016 under the aegis of EMEP and WGE
- An ad hoc expert policy group is established by the Executive body to highlight main policy message and impulse future priorities for the Convention and scientific work

1. Thanks to ambitious control strategies sharp decrease in emissions and trends are now decoupled from economic growth
2. Successful results: one extra year of average life expectancy in Europe, soils and lakes acidification controlled but:
3. European citizens still exposed to too high O3 and PM2.5 concentrations, huge impact of LRT
4. Need for broader coordination beyond Europe or USA scales and with other Conventions
5. Technical measures can still be implemented at all scales
6. Air pollution control costs are generally lower than the benefits
7. Need for urgent ratification of the Gothenburg Protocol
8. Link with other environmental policies (climate)
9. International policy collaboration and coordination of air pollution science essential for an overall improvement of the system
Merci de votre attention !

Laurence.rouil@ineris.fr