

# LRTAP Convention : lessons learnt



Laurence ROUÏL  
Chair of the EMEP Steering Body



*maîtriser le risque |  
pour un développement durable*

# 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 Persistent Organic Pollutants; amended in 2009
- 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;
- The 1984 Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP).



EECCA  
COORDINATING GROUP

# EXECUTIVE BODY

IMPLEMENTATION  
COMMITTEE

WORKING GROUP ON  
EFFECTS

EMEP STEERING BODY

WORKING GROUP ON  
STRATEGIES AND REVIEW

ICP FORESTS  
TASK FORCE

COORDINATING  
PROGRAMME  
CENTRE

TASK FORCE ON  
EMISSION INVENTORIES AND  
PROJECTIONS

TASK FORCE ON REACTIVE  
NITROGEN

ICP INTEGRATED  
MONITORING  
TASK FORCE

PROGRAMME  
CENTRE

CENTRE ON EMISSION  
INVENTORIES AND  
PROJECTIONS (CEIP)

TASK FORCE ON TECHNO-  
ECONOMIC ISSUES

ICP MODELLING AND  
MAPPING  
TASK FORCE

COORDINATION  
CENTRE FOR  
EFFECTS

TASK FORCE ON  
MEASUREMENTS AND  
MODELLING

ICP MATERIALS  
TASK FORCE

MAIN RESEARCH  
CENTRE

CHEMICAL COORDINATING  
CENTRE (CCC)

ICP VEGETATION  
TASK FORCE

PROGRAMME  
CENTRE

METEOROLOGICAL  
SYNTHESIZING CENTRE-WEST  
(MSC-W)

ICP WATERS  
TASK FORCE

PROGRAMME  
CENTRE

METEOROLOGICAL  
SYNTHESIZING  
CENTRE-EAST (MSC-E)

TASK FORCE  
ON HEALTH

WHO BONN

TASK FORCE ON  
INTEGRATED ASSESSMENT  
MODELLING

JOINT EXPERT GROUP ON  
DYNAMIC MODELLING

CENTRE FOR INTEGRATED  
ASSESSMENT MODELLING  
(CIAM)

TASK FORCE ON  
HEMISPHERIC TRANSPORT OF  
AIR POLLUTION

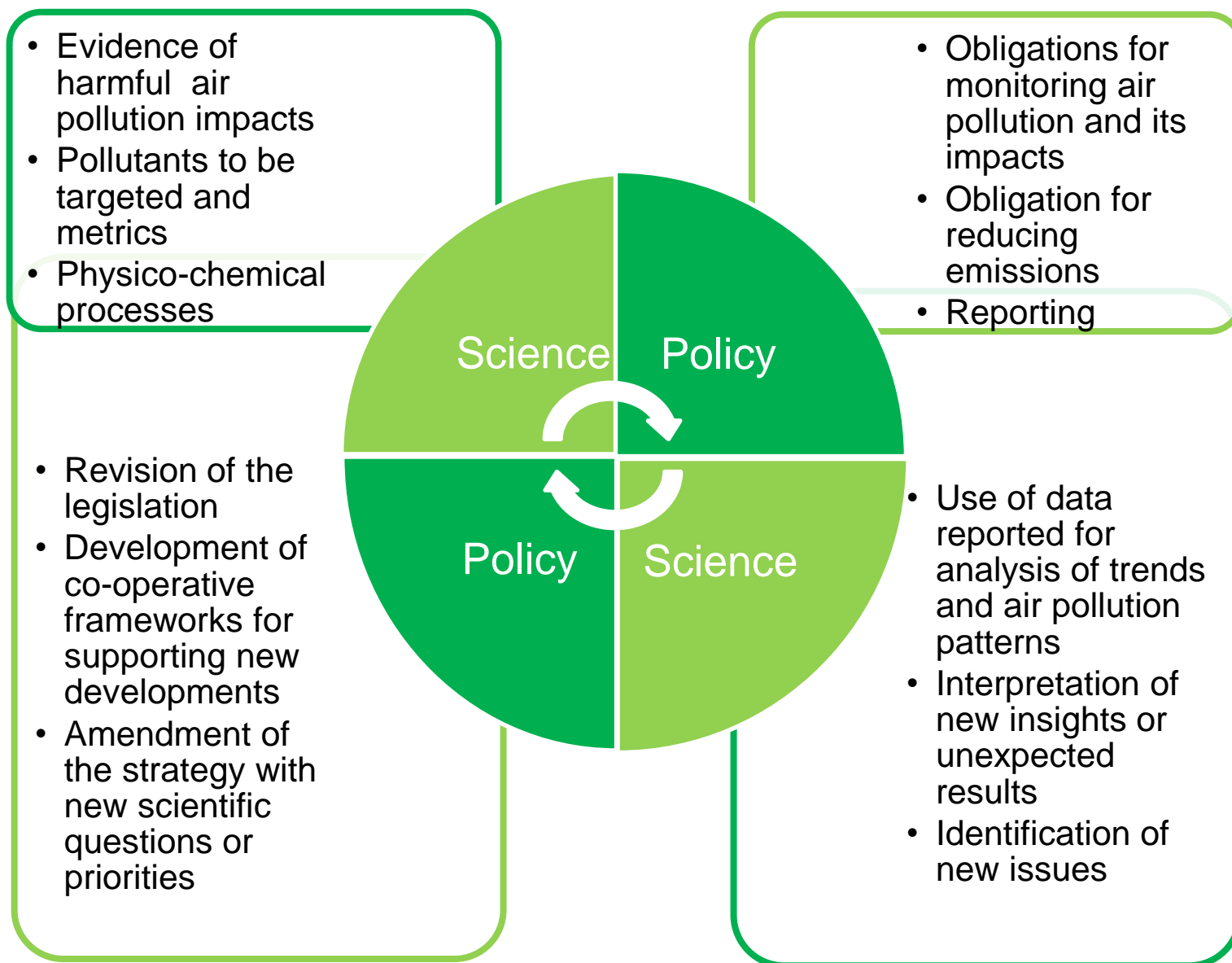
**LEGEND:**

- SUBSIDIARY BODIES
- TASK FORCES
- PROGRAMME/EMEP CENTRES

# 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





# The starting point : emission inventories

- 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)

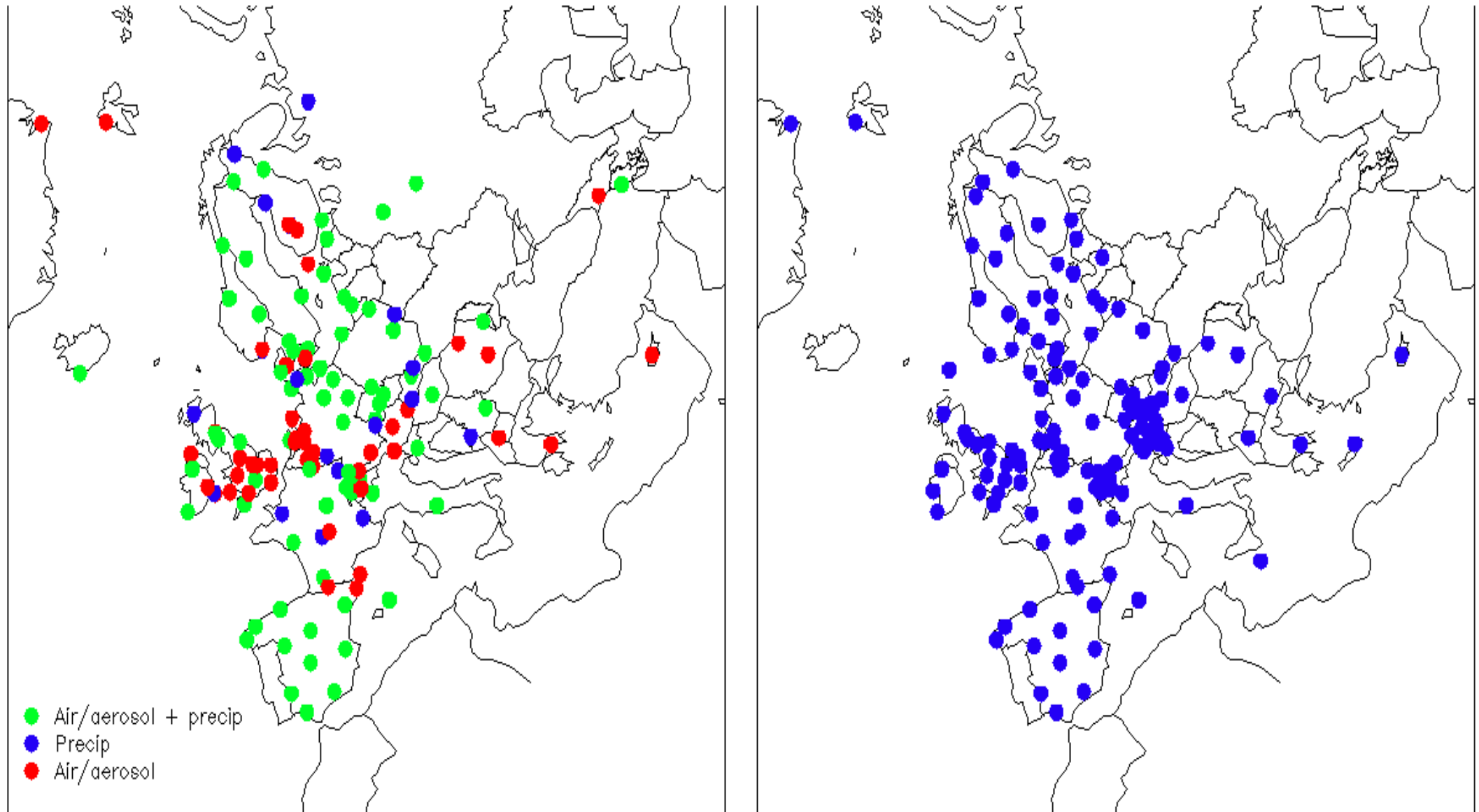
# Emissions : lessons learnt

- ❑ 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

# Monitoring and modelling (i)

emep

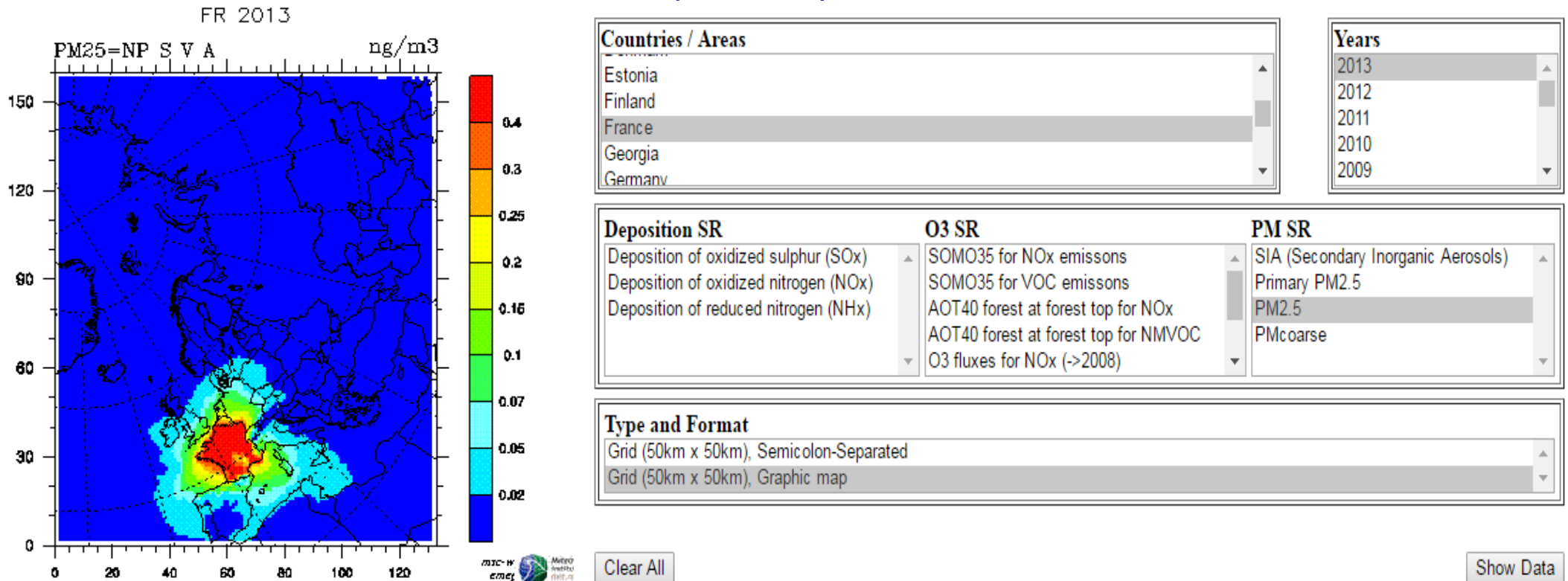
Co-operative programme for monitoring and evaluation of the long-range transmissions of air pollutants in Europe





# EMEP models

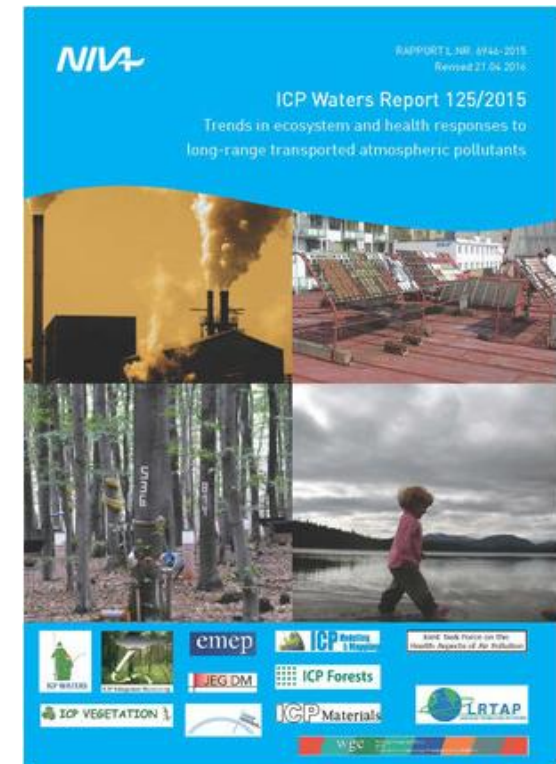
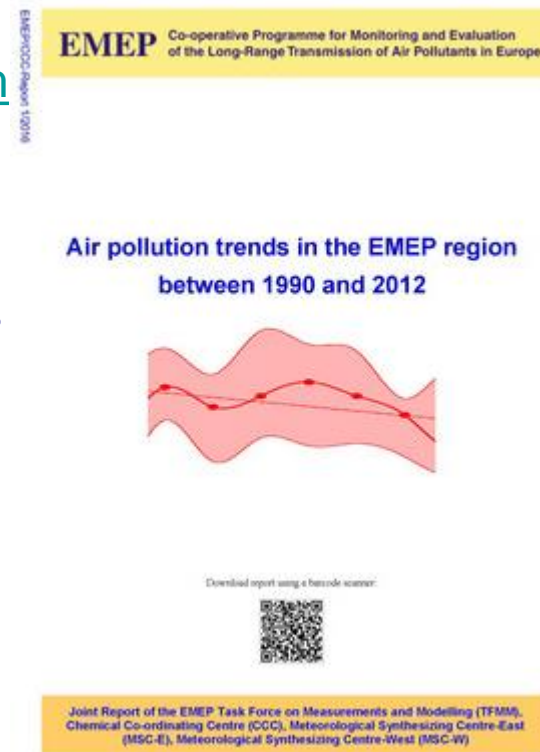
- EMEP models are developed by MSC-W (sulfur, nitrogen, ozone, PM compounds) and MSC-E (HM, POPs)



- Data are available through the website ([http://emep.int/mscw/index\\_mscw.html](http://emep.int/mscw/index_mscw.html) , <http://www.msceast.org/>)

# Monitoring and modelling : lessons learnt

- Very appropriate instruments to assess the impact of implemented policies: trends analyses
- Trends reports published in 2016  
<http://www.unece.org/env/lrtap/welcome.htm>
- 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 O<sub>3</sub> and PM<sub>2.5</sub> 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 !**  
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pour un développement durable |