
The Heavy Metals Protocol Status and Latest Developments

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The Aarhus Protocol on Heavy Metals

- Covers 3 metals: Cadmium, Lead and Mercury
- Entered into force in December 2003
- Ratified by 29 countries
- **Aims**
 - to control emissions of HMs caused by anthropogenic activities subject to long-range transboundary atmospheric transport and
 - to reduce the significant adverse effects on human health and environment

Basic Obligations of the HM Protocol

- Parties must reduce total annual emissions into the atmosphere of Cd, Pb, Hg, over base year (1990)
- Timescale to apply BAT and ELVs for new and existing stationary sources and product controls
- Parties must also develop policies, programmes and take measures to fulfil obligations, and report on these every 2 years
- Reports on strategies and policies for HMs abatement placed on UN ECE website

Technical Annexes of the HM Protocol

- Annex I: Heavy metals referred to with reference year
- Annex II: Stationary source categories
 - Combustion installations, foundries, installations for production of cement, glass, chlor-alkali by using mercury cell process
- Annex III: Best available techniques for controlling emissions from these source categories
- Annex IV: Timescales for the application of ELVs and BAT
- Annex V: Limit values for major stationary sources
- Annex VI: Product control measures (gasoline, batteries)
- Annex VII: Product management measures

Measures to Limit Mercury

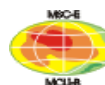
- Use of BAT and limit values for stationary sources
 - chlor-alkali production
 - waste incineration
 - combustion of coal and other fuels
 - ferrous and non-ferrous metals production ...
- Product measures
 - mercury in alkaline manganese batteries
- Product management measures (take into consideration)
 - substitution, collection, labeling, recycling
 - voluntary agreements
 - for example: measuring devices, lamps, dental amalgam, paint, batteries, children's toys

Health effects

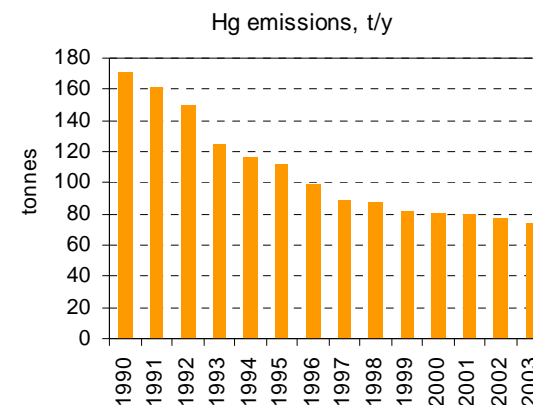
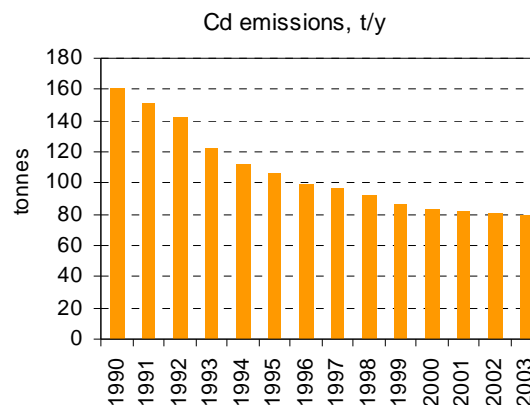
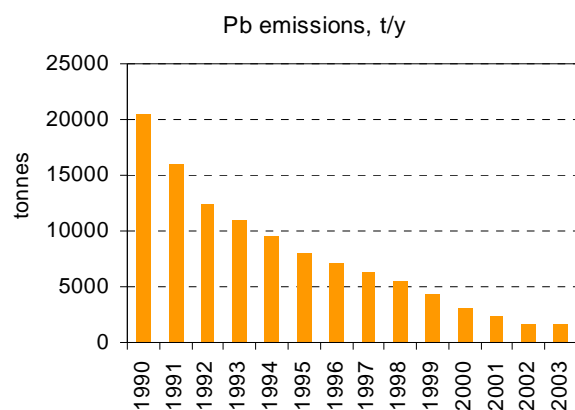
- Joint TF of WHO and UNECE published in 2007 an assessment of health effects of air pollution by Hg, Cd and Pb
- All 3 HM contribute to LRTAP
- Air borne concentrations of Mercury in Europe, and globally, are generally well below the levels known to cause adverse health effects from inhalation exposure
- Health effects occur in regions of higher concentrations (near sources and cities)
- High concentrations of Hg in northern lakes (e.g. Sweden, Finland)
- Even after considerable reduction of emissions through effective measures, excessive amounts of HMs exist due to current depositions. Therefore reducing the emissions into atmosphere and long-range transport of pollution is of great importance.
- High priority should be given to reduce methylmercury in fish

Emission Trends

Data for Pb, Cd and Hg for 1990 to 2003: 24 European countries



EMEP/MSCE-E



Emission reductions

Pb – 13 times

Cd – 2 times

Hg – 2.3 times

Source: 3rd TFHM meeting, 9-12 May 2006, Ottawa, Canada

Exceedances of HM

	Area@risk to Health 2000 Cd (%)	Area@risk to Health 2000 Pb (%)	Area@risk to Health 2000 Hg (%)	Area@risk of Ecotox. 2000 Cd (%)	Area@risk of Ecotox. 2000 Pb (%)	Area@risk of Ecotox. 2000 Hg (%)
EU25	0.03	24.32	2.4	0.02	48.64	85.75
Europe (excl. EECCA)	0.83	16.65	2.4	0.07	53.44	85.34

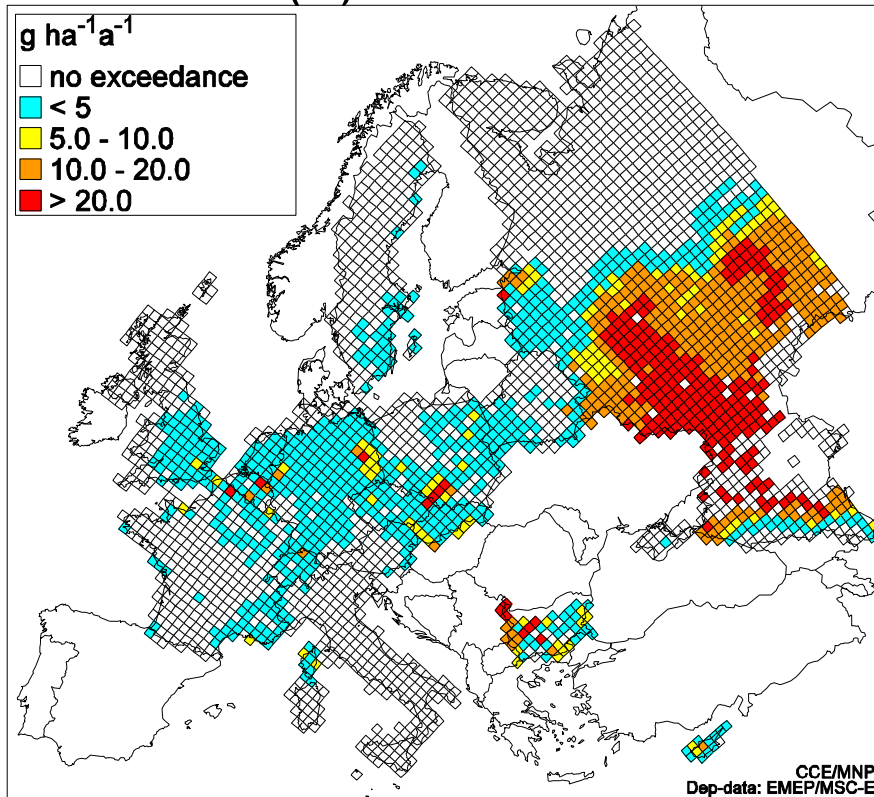
Areas at risk of health or ecosystem effects in 2000 based on official emission data incl. TNO adjustments
(depositions computed by EMEP MSC-E, Moscow)

Areas where deposition of lead and mercury exceed critical loads

(depositions computed by EMEP MSC-E, Moscow)

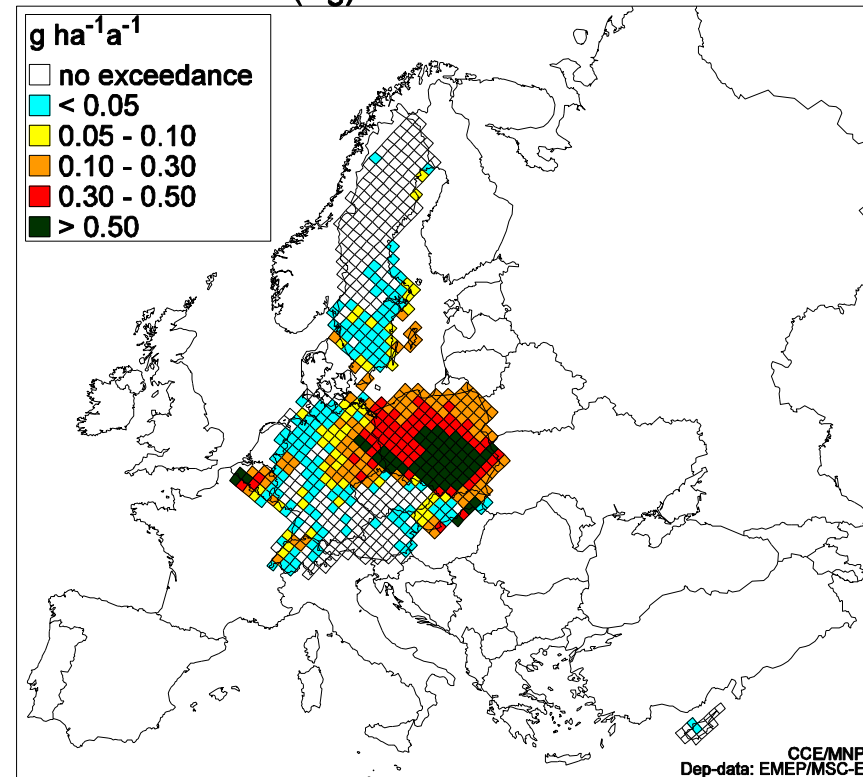
At risk of lead deposition

Exceedance of CL(Pb)



At risk of mercury deposition

Exceedance of CL(Hg)



Since the Workshop in Yerevan

- Work of the TF HM focused on following subjects
 - Technical review of a proposal to add new products
 - Analysis of options and implications to develop a proposal for a modern HM Protocol
 - Promote ratifications of the HM Protocol
 - Raise awareness and interest
 - Identify barriers which might impact on ratifications
 - Exchange of experiences, identify difficulties in the national implementation
 - Recommend further action and discuss possibilities of supporting countries wishing to join
 - Increase flexibility to ease ratifications

Since the Workshop in Yerevan (2)

- Discussion of the results of the Yerevan workshop at WGSR and EB of the Convention
 - Very useful presentations by national experts in Yerevan and at TF meeting
 - Exchange of experience, identified difficulties in national implementation
 - Recommendations for further action (from both sides) and possibilities to support countries wishing to join
 - SEE project of the Convention
 - Installation of pre-meetings at WGSR or EB meetings

Since the Workshop in Yerevan (3)

- Presentations of the workshop available
<http://www.unece.org/env/lrtap/TaskForce/tfhm/workshop%2014-16%20may%202008.htm>
- EMEP outreach for EECCA countries
 - Extension of EMEP domain for Central Asia
 - Expanding of the EMEP monitoring network (new stations)
 - Material in Russian language available
- Development of a checklist for national implementation plans
- Subjects discussed at WGSR, e.g.:
 - Translation of important documents (UNECE, BREF of EU)
 - Flexibility concerning base year, emission ceilings and ELVs
 - Extending timelines of for implementation / exemptions for existing sources
 - Installing focal points for all questions from EECCA and SEE

Projects to Support EECCA Countries and to Promote Ratifications

- Czech Republic - Republic of Moldova
- Germany – Armenia
- Sweden – Belarus, Russia, Ukraine (on projections and activity data for GAINS)
- Norway – different countries in the EECCA region supported (new stations in Armenia, Georgia, Kazakhstan, Moldova, Ukraine)
- EU – Russia (TACIS)
- EU – Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine (new project on air quality governance)

TF meeting in 2009

- Meeting in May in Stockholm
- Discussion of a proposal of the EU to add binding measures for products to Annex VI of the HM Protocol
- For batteries, measuring devices, vehicles, electrical and electronical equipment, fluorescent lamps, dental amalgam
 - Do the products contain intentionally mercury?
 - Potential to lead to a bioavailable form
 - Contribution to transboundary atmospheric emissions
- Do the measures reduce the emissions?
- What are the costs and benefits?
- Assessment of efficacy and risks or extent to which suitable alternatives exist

Where do we want to go?

- A modern, technical and up-to-date HM Protocol taking into account
 - flexibility for timelines, base years (new ratifying countries)
 - change of expedited procedure
 - up-to-date technical annexes (BAT, ELVs)
 - new products added to annex VI (implications on annex VII)
 - mercury export ban
- EU and Switzerland asked for negotiations of a new/revised HM protocol (EB 2009)
- New ratifying countries actively taking part
- Working together with UNEP on a worldwide legally binding instrument for mercury

Conclusions

- Reducing emissions of HM is of great importance
- Excessive amounts in the environment due to deposition
- Yerevan workshop is seen as valuable source of information on the EECCA and SEE region
- Initiatives and projects to support ratification underway in UNECE and EU
- It is time to negotiate a new HM protocol taking into account better the needs of EECCA and SEE countries
- A worldwide legally binding instrument on mercury can be supported through experience made within UNECE

Thank you!
Спасибо за внимание!

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