



Task Force on Hemispheric Transport of Air Pollution

Workshop on POPs Trends and Source Attribution

Co-Chairs

Heather Morrison (Canada)

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Spring 2021 TF HTAP Workshops

March 17: Regional & Extra-regional Trends of O₃
(& PM) for Gothenburg Protocol Review

April 13: Regional & Extra-Regional Trends of Hg

**April 15: Regional & Extra-Regional Trends of
POPs/Chemicals of Emerging Concern**

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1998 POPs Protocol (Amended 2009)

The protocol seeks to eliminate use or decrease emissions of:

Aldrin	Hexachlorocyclohexanes (HCH, including lindane)	Dioxins and Furans (PCDD/F)
Chlordane	Mirex	Hexachlorobenzene (HCB)
Chlordecone	Pefluorooctane sulfonate (PFOS)	Polychlorinated biphenyls (PCBs)
DDT	Pentachlorobenzene	Polycyclic Aromatic Hydrocarbons (PAHs)
Dieldrin	Polychlorinated naphthalenes (PCN)	
Endrin	Short-chain chlorinated paraffins (SCCPs)	
Heptachlor	Hexabromodiphenyl ether and heptabromodiphenyl ether	
Hexabromobipheyl	Tetrabromodiphenyl ether and Pentabromodiphenyl ether	
Hexachlorobutadiene	Toxaphene	

1998 Protocol has 34 Parties and entered into force in 2003. 2009 Amendments have been accepted by 21 Parties, and will enter into force when accepted by 23.

Article 10 of the Protocol commits Parties to periodically review:

- the progress made towards meeting the obligations set out in the Protocol, and
- the sufficiency and effectiveness of the obligations

We expect that the Executive Body will initiate a formal review of the HM Protocol in the next 2-5 years.

TF HTAP's Mandate

- TF HTAP's mandate is to understand the extra-regional contribution to air pollutants and their impacts in the UNECE region (Europe and North America).



- Although our focus is on pollutants identified by the LRTAP Convention, we have a responsibility to consider the health and ecosystem impacts of other air pollutants and bring those issues to the attention of the policy side.
- TF HTAP also is charged to contribute to the understanding of air pollution sources and impacts outside the LRTAP Convention that may help enable and motivate action in other regions of the world.

7 Policy-Relevant Science Questions

1. What are the observed and modelled trends in air concentration and deposition of Persistent Organic Pollutants (POPs) or other Chemicals of Emerging Concern (CEC) in the UNECE region and other regions of the globe?
2. To what extent are these trends associated with emission changes within each region or dependent on transport between regions and other environmental factors?
3. What are the relative contributions of contemporary and legacy emission sources to POPs/CEC concentrations and deposition in various regions and how have they changed over time?

7 Policy-Relevant Science Questions

4. How may POPs/CEC air concentrations and deposition levels and the contribution of various sources change in the future due to changes in emissions and climate change?
5. How do the historical and projected changes in POPs/CEC air concentrations and deposition relate to changes in levels in other environmental compartments, biota, or humans?
6. How well can we represent the processes that affect the long-term changes of POPs/CEC levels and fluxes in quantitative models?
7. What efforts are needed to develop a system of observations, emissions, and models to better understand and track these changes?

Objectives for Today's Workshop

1. Make sure that we are addressing the most appropriate policy-relevant science questions and addressing the most relevant POPs and CEC for future policies.
2. Begin to organize cooperative research to improve our capability to address the policy-relevant science questions.
 - What can we accomplish in 2 years?
 - What can we accomplish in 5 years?

In the next 4 hours, we want to develop a list of topics and tasks around which we can organize follow-up meetings and activities.

3. Identify research activities that
 - connect to other work under TF HTAP and the LRTAP Convention
 - build on work that has been completed other cooperative forums (including Stockholm Convention, AMAP, ...) and
 - contribute to meeting the needs of those forums to the extent practicable.

Follow Up Issues

1. Emissions Compilation, Intercomparison, and Evaluation

- Connect to HTAPv2 emissions inventory for O₃ and PM precursors

2. Compilation of Observations for Trend Analysis and Model Evaluation

- What pollutants? PAHs, D/Fs (Connection to Regional Modeling for GP Review)
- What time periods?

3. Model Intercomparison

- Chemical properties and Process parameterizations
- Primary and secondary emissions
- S/R Relationships

4. Historical and Future Scenarios for POPs/CEC

- Contamination History
- Emissions, climate, Land use, chemistry

5. Quarterly Webinars?

Follow Up Issues

- Incorporating Consideration of Trade Flows
- Impacts of Biomass Burning/Wildfires
- Atmospheric Transport of Microplastics