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**Steering Body to the Cooperative Programme for
Monitoring and Evaluation of the Long-range
Transmission of Air Pollutants in Europe**

Working Group on Effects

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Item 5 of the provisional agenda

**Draft 2018–2019 workplan for the implementation of the Convention
(science part)**

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Convention (science part)***

Summary

The present document has been compiled by the chairs of the Working Group on Effects and the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) based on the contributions submitted by the centres and task forces under the two scientific bodies of the Convention on Long-range Transboundary Air Pollution. The document contains the elements related to science of the draft 2018-2019 workplan for the implementation of the Convention.

* The present document is being issued without formal editing.



Introduction

1. The workplan for the implementation of the Convention on Long-range Transboundary Air Pollution translates the vision, objectives and strategic approaches set out in the Long-term Strategy for the Convention (ECE/EB.AIR/106/Add.1, decision 2010/18, annex). The draft biannual workplan for the period 2018–2019 takes into consideration the short-term recommendations developed by the ad hoc policy review group of experts – established by the Executive Body – as a policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3). The workplan structure builds on the primary needs of the Convention and its Parties, relating to five main areas: science; policy; compliance; capacity-building; and communication and outreach. For each area a table presents the specific activities planned, deliverables, the lead body or bodies and resource requirements or funding source.

2. This approach to structuring the workplan allows Parties to better assess the work of the different subsidiary bodies and their deliverables in meeting the Convention's needs and ensuring progress in realizing the vision set out in the Long-term Strategy. The draft workplan includes activities that should be completed in the 2018-2019 period. Long-term activities and related deliverables are set out in the mandates (terms of references) for the task forces and centres under the Convention.

1. Science

3. Science project activities in the 2018–2019 period are presented in table 1.¹

Table 1
Science

<i>Workplan item</i>	<i>Activity description/objective</i>	<i>Expected outcome/deliverable</i>	<i>Lead body(ies)</i>	<i>Resource requirements and/or funding source</i>
1.1 Improving tools to assess air pollution and its effects in the ECE region				
1.1.1 Monitoring and modelling tools				
1.1.1.1	Update the 2010-2019 EMEP Monitoring Strategy	Updated monitoring strategy (2019)	CCC with support from TFMM	Covered by the EMEP budget
1.1.1.2	Long range and urban air pollution ("Twin Sites"): Assess the contribution of long range transport of air pollution to urban air quality by means of combination of measurements and modelling	Synthesis on LRT contribution to urban air quality for several areas in Europe.(2018) Methodological report describing the optimal combination of models and	TFMM (led by Spain) with support from CAMS, JRC and WMO	Need for voluntary (in-kind) contributions from interested countries (Spain, France)

¹ For abbreviations and acronyms used in the tables in this document, please see list at the end of each table.

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		observations, including discussion of the advantages and limitations		
1.1.1.3	New EMEP field campaign focused on assessment of residential combustion to carbonaceous aerosols	Report and publications (2019)	CCC with TFMM plus cooperation with ACTRIS	Need for voluntary (in-kind) contributions from interested countries (Spain, France)
1.1.1.4	Use of micro-sensors: guidance and recommendations	Position paper (2018)	TFMM in cooperation with CCC and WMO	20,000 USD reserved by WMO for the workshop in 2018
1.1.1.5	Assessing the Impacts of bi-directional exchange of ammonia on source-receptor relationships for N and PM2.5	Report including a discussion on practical issues for future calculations (2019)	MSC-W	Need to find complementary resources
1.1.1.6	Impacts of uncertainties in SOA modelling for source-receptor matrices	Report focused on uncertainties in source-receptor relationships for integrated assessment modelling (2019)	MSC-W with possible contribution from TFEIP	Need to find complementary resources Supported by Norwegian Met.no co-funding (CAMS)
1.1.1.7	Black carbon definition and recommendations for monitoring	Position paper (2018)	TFMM with support from CCC, MSC-W and WMO	
1.1.1.8	Monitoring and assessment of the impact of the environment on corrosion and soiling effects on materials as well as their trends	Report on the trend exposure programme 2017-2018: - technical manual (2018) - corrosion and	ICP Materials	Covered by Italy, Sweden and recommended contributions

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		soiling data (2019)		
1.1.1.9	Gathering information on policy-relevant user friendly indicators to evaluate air pollution effects on materials by conducting case studies on UNESCO cultural heritage sites	Call for data on UNESCO sites: - report on risk assessment (2018) - report on economic evaluation (2019)	ICP Materials	Covered by Italy, Sweden and recommended contributions
1.1.1.10	Regional assessment of surface water acidification	Final Report (2018)	ICP Waters with possible contributions from ICP Modelling and Mapping and ICP Integrated Monitoring at the Task Force meeting in 2018	
1.1.1.11	Prepare new thematic report for 2019 (suggested topic, to be decided at 2018 Task Force meeting: “retention and effects of reactive nitrogen in surface waters”)	Report (2019)	ICP Waters with possible contributions from other bodies under the Convention	
1.1.1.12	Improving and validating soil moisture index in EMEP model	Report (2018)	ICP Vegetation In collaboration with MSC-W	
1.1.1.13	Report on available evidence of ozone impacts on crops in developing regions	Report (2018)	ICP Vegetation	
1.1.1.14	Final report of 2015/16 survey on HMs, N and POPs concentrations in mosses	Final Report (2018)	ICP Vegetation	
1.1.1.15	Ozone flux maps adapted for soil moisture limited areas	Ozone Flux Maps (2019)	ICP Vegetation in collaboration with MSC-W	
1.1.1.16	Monitoring manual for 2020 survey on HMs, N and POPs	Monitoring Manual (2019)	ICP Vegetation	

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	concentrations in mosses			
1.1.1.17	Transfer the European Union database to from CCE to CIAM following the adoption (by WGE) of results of the 2015-2017 call for data (September 2017)	The 2017 database for critical loads for acidification and eutrophication transferred to CIAM (2018) Use of the critical loads for acidification and eutrophication by CIAM for policy support	CCE, CIAM	CCE, CIAM
1.1.1.18	A WGE call (at the 3rd joint session of EMEP Steering Body/WGE) for reports to Parties to consolidate the biodiversity critical loads data	Preparation of national critical loads for biodiversity according to instructions in the 2015-2017 call for data (2018). National focal centres should report on their work in response to the WGE call, but withhold data until a successor of CCE becomes operational	National focal centres; optionally seek collaboration with Alterra	Depending on (in kind) funding: national focal centres and Alterra
1.1.1.19	Levels and effect of ground-level ozone in forests (continuation of monitoring ozone concentration and visible foliar injury at Level II plots and according to the ICP Forests Manual.	Reports about status and trends of ozone levels and visible injury on forest trees and other forest plants at light exposed sites	ICP Forests	
1.1.1.20	Integrated studies on effects ground-level ozone on tree growth and carbon sequestration, forest health will become	As above	ICP Forests	If additional resources

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	possible, also including estimates of ozone fluxes, at least for the most important tree species			
1.1.1.21	N deposition and its effects on forest vegetation (monitoring activities according to the ICP Forests Manual)	Reports about status and trends of N deposition in Europe, and comparison between measured and modelled N deposition rates	ICP Forests	
1.1.1.22	Integrated studies on N deposition effects on tree growth, carbon sequestration, biodiversity, soil and foliar chemistry specific, or mycorrhizas	As above		If additional resources
1.1.1.23	HMs in forest ecosystems: evaluation of available data to achieve an estimation of HM deposition and accumulation in soils, foliage and litterfall	Reports about status and trends of HM levels in European forests	ICP Forests	
1.1.1.24	Integrated studies on HMs in forests	Report on HMs in forests	ICP Forests	If additional resources
1.1.1.25	Consolidate existing evidence on health outcomes of exposure to air pollution	Update of the evidence on the health impact of ozone, PM, nitrogen dioxide, sulphur dioxide and carbon monoxide A (scoping) report on emerging issues and methods for health risk/impact assessment of air pollution and cost benefit analysis (pending availability of	Task Force on Health	Covered by the European Commission and other potential donors

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		resources)		
1.1.1.26	Long-term trends in atmospheric deposition and runoff water chemistry of S and N compounds at ICP Integrated Monitoring catchments in relation to changes in emissions and hydrometeorological conditions	Scientific paper (2018)	ICP Integrated Monitoring	
1.1.1.27	Dynamic modelling on the impacts of future deposition scenarios on soil and water conditions in ICP Integrated Monitoring catchments	Scientific paper (2018)	ICP Integrated Monitoring	
1.1.1.28	Dynamic modelling on the impacts of deposition and climate change scenarios on ground vegetation	Report (2019)	ICP Integrated Monitoring	
1.1.1.29	Relationship between critical load exceedances and empirical ecosystem impact indicators	Scientific paper (2019)	ICP Integrated Monitoring	
1.1.2 Emission and projection tools				
1.1.2.1	Condensables: Improve the representation of condensable semi-volatile organic compounds in emission	Report (2018) with guidance material on the inclusion of the condensable component in PM emissions reporting	TFMM and TFEIP with support from CEIP and MSC-W	
1.1.2.2	Improving quality of the EMEP emission inventory: comparison with other references (CAMS and JRC tools)	Report in 2018	CEIP in cooperation with MSC-W, MSC-E, TFMM plus CAMS and JRC	
1.1.2.3	Review of ammonia emission factors for	Literature review and discussions	TFEIP	Estimated budget:

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	‘Livestock & Manure Management’ source sector	held with the emissions inventory community to finalize drafting of proposed updates to the emissions inventory Guidebook (2019)		40,000 USD
1.1.3 Integrated assessment tools				
1.1.3.1	Analysis of effectiveness of implementation of Protocol on POPs	Contribution to evaluation of stricter measures for mitigation of BaP pollution levels; analysis of trends, key sources and projections Report in 2019	MSC-East in support to TFTEI	Covered by the EMEP budget
1.1.3.2	Ammonia: Contribute to improve understanding of expected benefit of ammonia mitigation in terms of wet and dry nitrogen deposition (including at high spatial resolution), long-term trends, chemical regimes of secondary inorganic aerosol formation	Report in 2019	TFIAM with support from TFMM and countries experts (France and Netherlands)	
1.1.4 Tools to account for global-scale issues in air quality assessment				
1.1.4.1	Contribution of international ship traffic emissions to ozone in Europe	Report by the end of 2018	MSC-W with support from TFHTAP	Supported by CAMS and European Union Envisum project
1.1.4.2	Evaluation of multi-compartment intercontinental transport of Hg and POPs	Contribution to UNEP Global Mercury Assessment 2018; Technical report - 2019	MSC-E in cooperation with TFHTAP and TFMM + other bodies (Minamata and Stockholm Conventions)	Supported by EMEP budget + AMAP contribution (12,000 USD)

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			and AMAP)	
1.1.4.3	Synthesis report on intercontinental transport of ozone and aerosols	Report(2018)	TFHTAP with support from TFMM and TFIAM	
1.1.4.4	Workshop on Hg and POPs State of Science and Next Steps	Workshop (2018)	TFHTAP with MSC-E	
1.1.4.5	Global deposition issues	Workshop on deposition model evaluation (2019)	TFHTAP with TFMM, MSC-E and MSC-W	
1.1.4.6	Sectoral opportunities to mitigate intercontinental transport	Workshop in 2018 and synthesis report in 2019	TFHTAP and TFIAM with support from AMAP and International Maritime Organization	
1.2 Cooperation with Parties				
1.2.1	Country-scale assessment of HM and POP pollution (case studies)	A number of assessments are already planned: Spain (BaP; 2018), Poland (cadmium, BaP; 2018), Germany (Hg; 2018), France (BaP; 2019, United Kingdom (lead, cadmium; 2019?) and Russian Federation (lead, cadmium; 2019?)	MSC-E in cooperation with TFMM and country experts	Should be covered by EMEP budget (40,000 USD)
1.2.2	Translation of the Modelling and Mapping Manual into Russian	The Modelling and Mapping Manual translated into Russian (2018)	ICP Modelling and Mapping, Russian federal service for hydrometeorology and environmental monitoring, National EANET	In kind (France and Russian Federation)

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			activity centre	
1.2.3	Capacity building for the health impact assessment of air pollution at regional and sub-regional levels	Development and implementation of the capacity building curriculum	Task Force on Health	Expected to be covered by recommended contribution
1.3 Cooperation with other projects and bodies (outreach activities)				
1.3.1	Cooperation with Copernicus/CAMS	Implementation on NRT facilities to report observations (2018)	CCC	Budget provided by Copernicus
1.3.2	Cooperation with CCAC	Strategy to deal with emission reporting at the global scale and with black carbon control strategy Workshop to be organised in 2018 Common strategy in 2019	EMEP with support from TFEIP, TFHTAP, TFMM	
1.3.3	Cooperation with Arctic Council and AMAP	Focus on black carbon in the framework of a European Union contract	CEIP, CIAM, MSC-W	Budget provided by AMAP (European Union contract)
1.3.4	Support Stockholm Convention in relation to atmospheric observations and data management within the ECE region	Report to annual joint sessions of Steering Body to EMEP and WGE	MSC-E	
1.3.5	Assessment of ozone risks in selected regions in the Northern hemisphere	Ozone risk maps for TFHTAP regions	ICP Vegetation in collaboration with TFHTAP	
1.3.6	Review the methods used for estimating burden of disease attributable to air pollution	Regional input to the global project coordinated by WHO Headquarters;	Task Force on Health	Expected to be covered by recommended contribution

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		technical report		
1.3.7	Review communication strategies for health messages related to air pollution, including on short term episodes and for susceptible groups	Regional input to the global project coordinated by WHO Headquarters; technical report	Task Force on Health	Expected to be covered by recommended contribution
1.4 Improving the functioning of WGE and EMEP and their subsidiary bodies				
1.4.1	Analyse effects monitoring networks within WGE to improve integrated working and reporting	Report on the effects monitoring network within WGE (2019)	WGE, ICPs	
1.4.2	Assess the complementarity of EMEP monitoring and observations undertaken by the ICPs. Facilitate the use of TFMM models for WGE community for instance in terms of ozone fluxes or model-data fusion for deposition mapping. Foster the use of PM composition at EMEP sites to better inform health impact assessments.	Report and joint EMEP/WGE workshop (2019)	TFMM and WGE	
1.4.3	Develop a common portal to enable integrated assessments and to assist the Parties in their implementation of air pollution strategies	Improvement of data access via the web (2019)	EMEP, WGE including ICPs and other subsidiary bodies	Expected to be covered by recommended contribution

Abbreviations: ACTRIS = Aerosols, Clouds, and Trace gases Research InfraStructure Network; Alterra = Wageningen Environmental Research; AMAP = Arctic Monitoring and Assessment Programme; BaP = benzo[a]pyrene; CAMS = Copernicus Atmosphere Monitoring Service; CCC = Chemical Coordinating Centre; CCE = Coordination Centre for Effects; CEIP = Centre on Emission Inventories and Projections; CIAM = Centre for Integrated Assessment Modelling; EEA = European Environment Agency; Hg = mercury; HM = heavy metal; ICP = International Cooperative Programme; ICP Forests = ICP on Assessment and Monitoring of Air Pollution Effects on Forests; ICP Integrated Monitoring = ICP on Integrated Monitoring of Air Pollution Effects on Ecosystems; ICP Materials = ICP on Effects of Air Pollution on Materials, including Historic and Cultural Monuments; ICP Modelling and Mapping = ICP on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends; ICP Vegetation = ICP on Effects of Air Pollution on Natural Vegetation and

Crops; ICP Waters = ICP on Assessment and Monitoring of Acidification of Rivers and Lakes; JEG = Joint Expert Group on Dynamic Modelling; JRC = Joint Research Centre of the European Commission; LRT = long-range transport (of pollutants); Minamata Convention = Minamata Convention on Mercury; Modelling and Mapping Manual = Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends; MSC-E = Meteorological Synthesizing Centre-East; MSC-W = Meteorological Synthesizing Centre-West; N = nitrogen; PM = particulate matter; POPs = persistent organic pollutants; S = sulphur; SOA = secondary organic aerosol; Stockholm Convention = Stockholm Convention on Persistent Organic Pollutants; Task Force on Health = Joint Task Force on the Health Aspects of Air Pollution; TFEIP = Task Force on Emission Inventories and Projections; TFHTAP = Task Force on Hemispheric Transport of Air Pollution; TFIAM = Task Force on Integrated Assessment Modelling; TFMM = Task Force on Measurements and Modelling; TFRN = Task Force on Reactive Nitrogen; TFTEI = Task Force for Techno-economic Issues; UNESCO = United Nations Educational, Scientific and Cultural Organization; WGE = Working Group on Effects; WGSR = Working Group on Strategies and Review; WMO = World Meteorological Organization.
