



# UNECE's Air Convention Gothenburg Protocol Review

September 2022

*8<sup>th</sup> meeting of the EMEP Steering Body and Working Group on Effects  
Gothenburg Protocol Review Group*



## ***Review of the Gothenburg Protocol***

- Review process launched by EB decision 2019/4; GPG tasked by WGSR Chair to lead the work; the process included the development of a preparatory document for the scope and content; a proposed outline of the review report, followed by 2 drafts and 1 final draft of the report
- Focused on assessing the adequacy of the obligations and the sufficiency of the progress made towards the achievement of the objectives of the amended Gothenburg Protocol;
- Took into account the legally required elements under article 10 (evaluations of black carbon and ammonia); as well as additional gaps/elements not covered by the Protocol
- Accompanied by two annexes with further scientific and technical information
- Includes conclusions and suggestions for next steps and further work.
- Will be discussed at the upcoming Heads of Delegation meeting in The Hague, and then formally discussed and potentially adopted at EB42

## *Status of key official documents for Gothenburg Protocol Review*

- **Final Review Report (EB42)**
- **Annex I - Scientific background (EB42)**
- **Annex II - Technical & Policy background (EB42)**
- **Flexibility Review Report (EB42)**
- **WGSR Task Force Reports (WGSR60)**
- **Cost of Inaction Report (WGSR60)**
- **Ammonia assessment Report (EB41)**
- **WGSR60 Report & EMEP/WGE8 Report**

# ***Status of key informal documents for Gothenburg Protocol Review***

- **Synergies Paper**
- **Methane options Paper**
- **Barriers to ratification and implementation Paper**
- **Non-technical Measures Paper**
- **Informal review report of GP technical annexes IV, V, VI, X and XI**
- **Post-EMEP/WGE Session Document (scenarios)**
- **Findings of the technical report on North America AQA (available late 2022)**
- **WGSR HoD Chair's summary (informal)**

# Conclusions of the GP Review Report

- The collective projected emission reductions will exceed the original overall emission reduction goal of the amended Gothenburg Protocol through the implementation of the 2020 emission reduction commitments;
- Emission reporting has generally improved, although there are still differences in the quality and completeness of the emission inventories reported by the Parties; improvements are needed;
- Despite emission reductions achieved so far, with a generally similar downward trend in pollutant concentrations and depositions, adverse effects on human health, ecosystems and materials continue to occur;
- Current legislation, including Annex II commitments, will not be sufficient to achieve the long-term objectives of article 2 in the amended Gothenburg Protocol (i.e. no exceedance of critical loads and levels);
- Modelling indicates exceedances of critical loads and levels (eutrophication, O<sub>3</sub>, PM<sub>2.5</sub> exposure above WHO air quality guideline), even with full implementation of all available technical measures and additional changes that were considered in the energy sector (intensified climate policy) and the agricultural sector (healthy food policy) will still occur;

# Conclusions of the GP Review report

- To increase the effectiveness of the amended Gothenburg Protocol more Parties will have to ratify and implement emission reduction commitments; barriers to implementation will need to be addressed;
- To achieve long-term objectives, non-technical and structural measures, synergies of climate and energy policies, as well as additional efforts outside the ECE region (e.g. in international shipping), will also be needed;
- Additional action is needed in the agricultural, energy sectors, road transport (international) shipping, solvent use, domestic wood, agricultural residue burning, gas flaring and landfills;
- Global CH<sub>4</sub> reduction (in addition to CH<sub>4</sub> and NO<sub>x</sub>/VOC control in the ECE region) will be needed to reduce ground level O<sub>3</sub> in the ECE region; and
- Additional emission reductions of NH<sub>3</sub> beyond the current Annex IX requirements are necessary to allow further ecosystem recovery.

# *Suggested next steps to address conclusions*

- Consider options for making further progress towards GP objectives, taking into account the barriers to ratification by the current non-Parties, including how to remove the barriers and support implementation of abatement measures;
- Apply a multi-pollutant/multi-effect approach when preparing next emission reduction steps, including synergies and interactions with other areas and including non-technical measures;
- Further reductions of exceedances of the 2021 WHO air quality guidelines and critical loads will require increased efforts at all levels: international, national and local. Cooperation with other international fora needs to be strengthened, in particular for CH<sub>4</sub>;
- Consider additional action on NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>2.5</sub> (BC), VOCs and in particular NH<sub>3</sub>;

# *Suggested next steps to address conclusions*

- Continue scientific work and policy discussions on CH<sub>4</sub> and consider potential action on the appropriate policy mechanism for achieving CH<sub>4</sub> reductions to reduce ozone;
- Continue scientific and policy work on setting metrics for BC and inclusion of condensable particles in PM reporting; and consider appropriate action;
- Updating the technical annexes should take into account current barriers to implementation;
- Continue to update the EMEP Emission Inventory Guidebook, as the reference for preparing the emission inventories, in line with improvements in scientific and technical knowledge;
- Develop a comprehensive guidance document on non-technical and structural measures.



# GPG Members

- *Chair:* Kimber Scavo
- *WGSR Bureau:*  
Till Spranger (WGSR Chair), Peter Meulepas, Dominique Pritula, Donna Yates
- *WGE & EMEP SB Chairs:*  
Isaura Rabago, Laurence Rouil
- *Invited experts:* Richard Ballaman, Noe Megrelishvili
- *Task Force Co-Chairs:*  
Rob Maas & Stefan Åström (TFIAM); Claudia Marques dos Santos, Tommy Dalgaard & Mark Sutton (TFRN); Tiziano Pignatelli & Jean-Guy Bartaire (TFTEI)
- *Advisors:* Anna Engleryd (EB), Susanne Lindahl (EC)
- *Secretariat:* Alina Novikova