



UNECE's Air Convention Gothenburg Protocol Review

12 December 2022

Presentation to the Executive Body

42nd Session

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
- Considered 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 scientific and technical information
- Includes conclusions and suggestions for next steps and further work
- HoD meeting for informal discussions & set comment period of 7 November
- Presented as an official document & tracked changes version with comments submitted

Status of key official documents for Gothenburg Protocol Review

- Scope and Content WGSR58
- Preparatory Document WGSR59
- Ammonia assessment Report EB41
- Draft 2 of Review Report WGSR60
- WGSR Report & Task Force Reports WGSR60
- Cost of Inaction Report WGSR60
- EMEP/WGE Report 8th Joint Session
- Final Review Report EB42
- Annex I - Scientific background EB42
- Annex II - Technical & Policy background EB42
- Flexibility Review Report EB42

Status of key informal documents for Gothenburg Protocol Review

- **Non-technical Measures** EB41
- **Synergies & interactions with other policy areas** WGSR60
- **Methane options** WGSR60
- **TFTEI review of technical annexes IV, V, VI, X and XI** WGSR60
- **Compilation responses to flexibilities questionnaire** WGSR60
- **Barriers to ratification and implementation** EB42
- **Chair's report to informal HoD Meeting** EB42
- **Supplementary info from CIAM (scenarios)** EB42
- **Technical report on North America AQA (available 2023)**
- **Responses to ammonia questionnaire** EB42

Conclusions of the GP Review

- 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 (terrestrial and aquatic) and materials continue to occur;

Conclusions of the GP Review

- 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, O₃, PM_{2.5} 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) they will still occur;

Conclusions of the GP Review

- 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 CH₄ reduction (in addition to CH₄ and NO_x/VOC control in the ECE region) is needed to reduce ground level O₃ in the ECE region; and
- Additional emission reductions of NH₃ 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 CH₄;
- Consider additional action on NO_x, SO₂, PM_{2.5} (BC), VOCs and in particular NH₃;

Suggested next steps to address conclusions

- Continue scientific work and policy discussions on CH₄ and consider potential action on the appropriate policy mechanism for achieving CH₄ 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;
- An update to 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; and
- Develop a comprehensive guidance document on non-technical and structural measures.

Status of Main Review Report

- Letter sent after the HoD meeting with a request to submit proposed edits on the Main Review report to the Secretariat by 7 November
- GPG prepared a tracked changes version of main review report for submittal as an informal document to help facilitate finalizing the review
- EB to discuss tracked changes version of main review report with aim to adopt a final version at EB42

Follow-up Actions

- EMEP-WGE will produce an “ex-post analysis report” to re-assess the results of the GAINS-calculations using the detailed models of EMEP-and WGE-centres.
- EMEP-MS-CW will produce a new LOW-scenario for ozone in Europe, that will include ambitious global methane reductions.
- TFIAM/EPCAC together with CIAM and EMEP-MS-CW will produce an analysis on the effectiveness multiscale policies: what can be done at the local scale and what needs to be done internationally?
- TFIAM (together with TFRN) will produce a draft report on potential and successful non-technical and structural measures.

Next Steps

- Tentative: EB to conclude the review at its 42nd session and to adopt a decision on next steps (see informal document - draft EB decision)
- Tentative: EB creates a new ad hoc group of experts to address appropriate policy responses to review conclusions.

GPG Members

- *GPG 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