

United States Government Comments on the Draft Open-Ended Scientific Group Scientific Report

The United States welcomes the draft scientific report of the Open-Ended Scientific Group (OESG) and commends the substantial effort of OESG members and rostered experts. The following comments are submitted in support of this first effectiveness evaluation and with an eye toward the lessons learned that will strengthen the next cycle, where we anticipate that additional data will be available and the relationships between emissions trends and observable environmental signals will be clearer. We offer three overarching comments on substance below, followed by more detailed input organized by section.

We also flag that in the final report, the United States will be unable to accept references to "climate change" or "indigenous knowledge". We note that the Minamata Convention's objective and scope are focused on protecting human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. The Convention does not establish obligations related to climate change, nor does it provide a basis for expanding its mandate to address climate policy or to incorporate non-scientific knowledge systems into technical assessments. We request that references to "climate change" be removed or, where environmental interactions must be described, replaced with more precise scientific terminology that describes the specific environmental variables or processes being discussed (e.g., "atmospheric circulation patterns," "temperature-dependent processes," "precipitation variability") without invoking the broader climate change framework. Similarly, references to "indigenous knowledge" should be removed. The Convention does not reference indigenous knowledge in any obligation, and we should ensure the OESG's scientific assessment remains based on peer-reviewed scientific literature, standardized monitoring data, and transparent methodologies that can be independently verified and replicated, consistent with the OESG's technical mandate under Article 22 of the Convention.

Overarching Comments

1. Signal Detection. The central finding of this report — that it is not yet possible to attribute observed environmental trends directly to Convention implementation — is a logical and expected result of conducting the first effectiveness evaluation only nine years after the Convention entered into force, rather than a shortcoming of the science, the OESG, or the Convention. This central finding reflects the well-documented time lags between changes in primary anthropogenic emissions and detectable changes in environmental concentrations and human exposures, particularly given that legacy re-emissions from soils and oceans account for approximately 70% of annual global Hg flux and that primary anthropogenic emissions represent only approximately 25% of the total. We strongly suggest that the OESG ensures this framing is consistently applied throughout the report and prominently stated in the executive summary. Positive signals are emerging in the Northern Hemisphere, where non-ASGM emission reductions have been most pronounced and monitoring is most robust. The declining Northern Hemisphere Hg trend, the dramatic decline in chlor-alkali-driven Hg emissions, and the agreement between model simulations and observations should be highlighted as evidence of early Convention effectiveness.

2. Data Gaps. The United States commends the thorough documentation of data gaps and harmonization challenges in the lessons learned report and recognizes these as among the most valuable contributions of this first evaluation. In future cycles, we anticipate these gaps will narrow as monitoring programs mature and data-sharing infrastructure improves.

We would not support the OESG drawing explicit or implicit conclusions that filling data gaps requires new financial obligations under the Convention or expanded use of the Convention's financial mechanism (Article 13). We note that the report at lines 598-599 observes that "*the Convention does not have obligations, procedures, or infrastructure for the reporting or collection of emissions and releases estimates or environmental and human monitoring data.*" We understand that observation as a factual description of the current framework, not a call for change, and would encourage the OESG to work to ensure it can be read in that spirit. Future data improvements may be recommended in the context of voluntary scientific cooperation, national monitoring programs, and the existing scientific partnerships that have already supported this evaluation — consistent with the Convention's provisions on emissions and releases under Articles 8 and 9, including, where relevant, obligations related to national plans and inventories; provisions on technical assistance and capacity building under Article 143; provisions on information exchange and research, development, and monitoring under Articles 18 and 19;; and with the implementation reporting framework under Article 21; and provisions on the effectiveness evaluation under Article 22.

3. Data Integrity. The United States emphasizes the importance of maintaining the independence of the OESG's scientific analysis. Emissions inventories and monitoring data submitted by individual Parties or national research teams should be clearly attributed as such and presented alongside independent global inventories (e.g., EDGAR v8.1) for comparison and transparency. Where national data deviate substantially from independent estimates, the report should explain the nature and magnitude of those differences and the OESG's basis for how the data were used. More detailed comments are provided below.

Detailed Comments by Discussion Section

A. Emissions (Section 2.1)

Lines 711–712: The OESG used emissions data submitted by China (Cui et al., 2025) in the regional trend analysis. The United States requests clarification on: (1) whether EDGAR v8.1 also contains estimates for China and how those compare to Cui et al.; (2) what criteria the OESG applied in deciding to use national data alongside or in preference to the independent inventory for this region; and (3) whether a comparable substitution was made for other large emitters and on what basis. Without this transparency it is difficult for Parties to understand the choices used by the OESG in data selection, and any potential discrepancies in results — including as flagged for LRTAP emissions data discussed immediately below.

Lines 736–741: The report identifies a significant difference between EDGAR and LRTAP emissions data, with LRTAP higher and showing a decreasing trend while EDGAR shows an increasing trend over the same period and geography. We appreciate the OESG clearly flagging this discrepancy. It may be helpful for readers to have additional clarity on: (1) what

methodological or definitional differences explain this discrepancy; and (2) whether the differences are consistent across the UNECE region or reflect sub-regional variation.

B. Releases (Section 2.2)

Lines 851–859: The analysis relies substantially on GMA 2018 data reflecting 2015 conditions. Additional clarity on whether a new GMA with updated global release estimates is expected ahead of the next effectiveness evaluation cycle, and if so, what difference that would make to the quality of the releases analysis compared to the current approach of estimating releases from emissions data and activity factors, would be helpful.

Line 881: Please confirm whether the Kocman 2025 data presented in this section represent global mean estimates. The United States also recommends that the GMA 2018 sectoral global releases data be presented as a table in this section for comparability to the Kocman 2025 estimates.

Line 903: The unit of the second column of the GMA 2018 global anthropogenic Hg releases table is not labeled. Please add a column header specifying the unit (percent of global total).

C. Air (Section 2.3)

Line 101: The report indicates air emissions from non-ASGM sources ‘have generally decreased since 2008 (or 2010).’ This could be slightly expanded upon to help immediately clarify why this is expressed this way.

Lines 382–384: The report notes that an increase in Southern Hemispheric average air concentrations has not been observed at the limited sites with long-term data, despite modeling suggesting ASGM-driven increases. The United States requests clarification on what type and spatial scale of observations would be needed to confirm or refute this modeled trend. We would encourage the lessons learned report to address this as a monitoring priority.

D. Human Exposure (Section 2.7)

Lines 347–348: The phrase ‘Many of the datasets with higher analytical detection limits and data were censored at the reporting limit’ is unclear. Please clarify whether this means values below the detection limit were substituted at the detection limit value or were excluded from analysis entirely. The treatment of left-censored data has material implications for trend analysis and should be described explicitly.

E. Integrated Analysis (Section 3)

Lines 7191–7237: The integrated analysis provides strong and appropriately cautious language explaining why detectable environmental signals are limited at this early stage. The United States strongly supports this framing and recommends that the following points be reinforced in the executive summary: (1) primary anthropogenic emissions represent only approximately 25% of total Hg flux to the atmosphere, with approximately 70% from legacy re-emissions; (2) changes attributable to Convention implementation over the study period may represent a change in total global flux on the order of 2%, which is difficult to detect against natural variability; and (3) the

causal chain illustration (Figure Y) demonstrates how the number of non-Convention drivers grows as you move from emissions toward human exposure. These points collectively explain why limited signals are expected at this stage and why the Convention can nonetheless be working.

Lines 8254-8316 (Section 3.4.4): The model-based finding that declining Northern Hemisphere atmospheric Hg(0) concentrations are consistent with reductions in primary anthropogenic non-ASGM emissions during the Convention period should be presented more prominently in both the integrated analysis and the executive summary. The SCAv4 scenario showing that a ~300 Mg/yr emission reduction matches observed Northern Hemisphere trends is a significant positive finding and merits clear statement as early evidence of Convention effectiveness.

Comments on the future Lessons Learned Report

The United States strongly supports the documentation of lessons learned as one of the most valuable contributions the OESG can make to improving future evaluations. Throughout this section, we encourage the OESG to frame data needs as scientific and voluntary cooperation opportunities rather than requirements to satisfy Convention obligations, and to document what data gaps were encountered and what scientific advances would improve future evaluations without implying that new Convention mechanisms, reporting obligations, or expanded use of the financial mechanism are necessary to address those gaps. Some elements of the current report may be particularly helpful for this future report.

Lines 595-605: The draft OESG report notes that the OESG had to develop data use policies, standardized data formats, and data management infrastructure without Convention support. We recognize and commend the significant additional effort and time this required. The lessons learned report should strongly recommend that the data infrastructure developed for this evaluation cycle be maintained and improved as a standing resource rather than rebuilt from scratch for the next cycle.

Lines 612-618: The report distinguishes between data that was received or acquired and data that was identified but not available. Information on whether the volume and nature of the identified-but-unused data is sufficient to make a meaningful difference in analysis quality if it were available, and what the primary barriers to access were (e.g., data use authorization, format incompatibility, resource constraints) would be helpful.

Lines 635-636 and Monitoring Guidance: Clarity on whether Tier 1 monitoring methods as currently defined in the Monitoring Guidance are applicable to ASGM-related emissions and releases, given that ASGM now accounts for approximately 50% of global anthropogenic emissions. If Tier 1 methods are not well-suited to ASGM contexts, this should be noted as a gap in the Monitoring Guidance to be addressed in future guidance revisions.

Lines 1071-1076: We wondered whether there would be value in the lessons learned report noting whether the OESG could opine on the potential influence of enhanced adoption of mercury-free or reduced-mercury processing techniques in ASGM regions as a specific intervention capable of changing the current trajectory of emissions and releases from that sector, including whether any data on technology distribution or uptake are available.

Questions Regarding Incomplete Sections

The April 10 draft notes that multiple analytical sections remain incomplete. For each of the sections listed below, the United States would appreciate information from the OESG on when the section will be completed and whether completed text will be available for Party review prior to the June 2026 EEG meeting.

- Sections 2.1.4–2.1.6 (Mitigation Contribution, Counterfactual, and Future Emissions) at Lines 818-848
- Sections 2.2.2–2.2.3 (ASGM Releases to Freshwater and Coastal Water) at Lines 860-876
- Sections 2.2.5–2.2.10 and 2.2.14–2.2.15 (Non-ASGM Releases and Future Scenarios) at Lines 935-995 and Lines 1093-1110, respectively

Drafting and Clarification Comments

Global: Given that this report has numerous contributors, it is understandable that there is inconsistency in the approach to acronyms, how to express numerical values, etc. For the final draft, a standard approach should be determined that ensures readers are able to easily read the report and quickly understand the acronyms in context.

Global: In certain sections of the report, there is the usage of words like ‘we’, ‘us’, and ‘our’ that disrupt the neutral, detached perspective that is needed for this report, particularly given that this report is a compilation of work from numerous authors and as such there is no fixed ‘we’.

Global: A track-changed version of the draft is attached to help identify many of the examples of issues discussed above in the previous two global comments. Further, the track-changed version offers possible rewrites to improve clarity and flow and sometimes offers comments as well. Minor spelling and capitalization concerns are also identified. Line numbers may be slightly off those of the original draft.

Lines 209-210: Perhaps this could be reworded, as this statement seems neither a finding nor does it seem to directly respond to the question headlining the given section. Seems like a recommendation that could go elsewhere.

Line 280: Word missing. Sentence reads ‘86% of...’ but the noun is absent. Further discussed in two comments in the track-changed document.

Lines 347-348: ‘Many of the datasets with higher analytical detection limits and data were censored at the reporting limit’ is unclear. See substantive comment above.

Line 689: Word missing. Likely ‘make’ data available or similar.

Lines 801–810: This passage contains grammatical errors and confusing word choices to such an extent that is difficult to determine what is intended to be communicated. Suggested, non-exhaustive edits to improve this section can be found in the attached document with track changes.

Lines 1007-1009: Suggest rewrite to improve flow and clarity. See track-changed document for suggested revision.