
**Montreal Protocol
on Substances that
Deplete the Ozone Layer**Distr.: General
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**Open-ended Working Group of the Parties
to the Montreal Protocol on Substances
that Deplete the Ozone Layer**
Forty-sixth meeting
Montreal, 8–12 July 2024
Items 3–10 of the provisional agenda***Issues for discussion by and information for the attention of the
Open-ended Working Group of the Parties to the Montreal
Protocol at its forty-sixth meeting****Note by the Secretariat****I. Introduction**

1. The present note provides an overview of the issues on the provisional agenda of the forty-sixth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. Section II contains a summary of issues for discussion by the Open-ended Working Group. Section III contains information regarding decision XXXV/7 on emissions of HFC-23, which will not be addressed by the Open-ended Working Group at its forty-sixth meeting but which is relevant to the Thirty-Sixth Meeting of the Parties to the Montreal Protocol, to be held from 28 October to 1 November 2024. Section III also contains information on progress in the organization of the Thirty-Sixth Meeting of the Parties and associated meetings, including the workshop on life-cycle refrigerant management, as well as information on the thirteenth meeting of the Conference of the Parties to the Vienna Convention, which will be held jointly with the Thirty-Sixth Meeting of the Parties, and the twelfth meeting of Ozone Research Managers.

2. Further information on a number of items on the provisional agenda will be provided in an addendum to the present note (UNEP/OzL.Pro.WG.1/46/2/Add.1) once the expected 2024 reports by the Technology and Economic Assessment Panel have been finalized. Technology and Economic Assessment Panel reports are anticipated under item 3 of the provisional agenda, on presentations by the Technology and Economic Assessment Panel and the Scientific Assessment Panel and discussions on very short-lived substances, feedstock uses of controlled substances and emissions of carbon tetrachloride; item 4, on life-cycle refrigerant management; item 6, on the presentation of the Technology and Economic Assessment Panel's 2024 progress report and discussions on nominations for critical-use exemptions for methyl bromide for 2025, energy efficiency and panel membership changes; and item 8, on the technology review by the Technology and Economic Assessment Panel pursuant to paragraph 5 of decision XXVIII/2 in relation to possible compliance deferral for Article 5, group 2 parties. The addendum will contain summaries of the Panel's reports as well as updates to the information provided by the Secretariat.

* UNEP/OzL.Pro.WG.1/46/1.

3. The following volumes are expected to be issued by the Technology and Economic Assessment Panel in May 2024 and will be posted on the portal of the forty-sixth meeting of the Open-ended Working Group:

- (a) Volume 1: Technology and Economic Assessment Panel 2024 progress report;
- (b) Volume 2: Evaluation of 2024 critical-use nominations for methyl bromide – interim report;
- (c) Volume 3: Decision XXXV/11 task force report on life-cycle refrigerant management.

4. Issues not directly related to the implementation of the Montreal Protocol or decisions of the parties but still of possible interest to the parties will be addressed in an information note on issues that the Secretariat would like to bring to the attention of the parties (UNEP/OzL.Pro.WG.1/46/INF/2). That note will contain information on, among other matters, activities undertaken by the Secretariat, its cooperation with and contributions to the work of the United Nations Environment Programme and other bodies, and its participation in relevant meetings since the Thirty-Fifth Meeting of the Parties, which was held from 23 to 27 October 2023.

II. Summary of issues for discussion by the Open-ended Working Group at its forty-sixth meeting

Agenda item 3

Presentations by the Technology and Economic Assessment Panel and the Scientific Assessment Panel

5. The Thirty-Fifth Meeting of the Parties adopted several decisions requesting the Technology and Economic Assessment Panel, in cooperation with the Scientific Assessment Panel, to include information in its 2024 progress report for consideration by the Open-ended Working Group.

6. The parts of the 2024 progress report that have been prepared by the Technology and Economic Assessment Panel in cooperation with the Scientific Assessment Panel will be presented jointly by the two panels under item 3 of the provisional agenda, followed by discussions by the Open-ended Working Group under the relevant sub-items of item 3.

(a) Very short-lived substances (decision XXXV/6)

7. The issue of very short-lived substances, including dichloromethane, was discussed in 2023 as a concern in response to the Scientific Assessment Panel's finding, in its 2022 quadrennial assessment report, that very short-lived substances had a significant impact on ozone depletion, particularly in the lower stratosphere. The Thirty-Fifth Meeting of the Parties adopted decision XXXV/6, requesting the Technology and Economic Assessment Panel, in cooperation with the Scientific Assessment Panel, to include in its 2024 progress report updated information on very short-lived substances, including their ozone-depleting potential and the impact of each of the very short-lived substances on the stratospheric ozone layer, in quantifiable terms, and information on alternatives to very short-lived substances in the main applications for which they are currently used, including information on availability, technical feasibility, economic viability, safety and sustainability.

8. The response to decision XXXV/6 will be included in the Technology and Economic Assessment Panel's 2024 progress report, and a summary of the response will be provided in the addendum to the present note.

(b) Feedstock uses of controlled substances (decision XXXV/8)

9. In 2023, parties discussed their concerns prompted by the findings of the Technology and Economic Assessment Panel and the Scientific Assessment Panel in their 2022 quadrennial assessment reports, which highlighted significant increase in the production of controlled substances used as feedstock and increased emissions of such substances. The Thirty-Fifth Meeting of the Parties adopted decision XXXV/8, requesting the Technology and Economic Assessment Panel, in cooperation with the Scientific Assessment Panel as appropriate, to provide in its 2024 progress report an update on the emissions from feedstock production, as by-products and from feedstock use of controlled substances, including the sources of such emissions, a comparison of estimates of annual global emissions of controlled substances by species based on bottom-up calculations and estimates made by the Scientific Assessment Panel on the basis of atmospheric observations, the methodology adopted for estimating

the emissions, updated information on alternatives, and information on best practices and technologies for minimizing emissions.

10. A summary of the Technology and Economic Assessment Panel's report on the issue of feedstock uses of controlled substances will be provided in the addendum to the present note. The Open-ended Working Group may wish to consider the report and recommend a way forward.

(c) Emissions of carbon tetrachloride (decision XXXV/9)

11. The Thirty-Fifth Meeting of the Parties continued discussions on ongoing emissions of carbon tetrachloride in the light of new information in the Technology and Economic Assessment Panel's 2023 progress report on national procedures and frameworks in place for management of production, by-production, feedstock use or process-agent use of carbon tetrachloride. The new information had been provided by parties in response to the invitation in decision XXXIV/6. The Thirty-Fifth Meeting of the Parties adopted decision XXXV/9, requesting the Technology and Economic Assessment Panel, in consultation with the Scientific Assessment Panel, to provide in its 2024 progress report an update on emissions of carbon tetrachloride, including emissions by source category, updated information on alternatives to carbon tetrachloride use for feedstock applications, and updated information on best practices and technologies for minimizing carbon tetrachloride emissions.

12. A summary of the Technology and Economic Assessment Panel's update on emissions of carbon tetrachloride will be provided in the addendum to the present note. The Open-ended Working Group may wish to consider the update and recommend a way forward.

Agenda item 4

Life-cycle refrigerant management (decision XXXV/11)

13. The Thirty-Fifth Meeting of the Parties continued the discussion on life-cycle refrigerant management initiated at the forty-fifth meeting of the Open-ended Working Group in the context of the consideration of the 2022 quadrennial assessment of the Montreal Protocol, and subsequently adopted decision XXXV/11. In paragraph 1 of decision XXXV/11, the Technology and Economic Assessment Panel was requested to prepare a report on available technologies for managing refrigerants, including leakage prevention, recovery, recycling, reclamation and destruction, the obstacles and challenges associated with effective refrigerant management, the costs and climate and ozone benefits associated with such management, and policies and incentive schemes for ensuring effective management. In paragraph 2 of the decision, the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol was requested to consider providing a window of funding for countries who had completed their national inventories and plans for managing refrigerants in accordance with Executive Committee decision 91/66, to support the development of those plans. In paragraph 3, parties were encouraged to develop strategies, policies and activities that addressed life-cycle refrigerant management, and in paragraph 4 the Secretariat was requested to organize a workshop in 2024 to share information and discuss challenges and opportunities in life-cycle refrigerant management.

14. The Chair of the Executive Committee is expected to report on the progress made by the Executive Committee on the parties' request in paragraph 2 of decision XXXV/11 during the high-level segment of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol. In accordance with the request in paragraph 4 of decision XXXV/11, the Secretariat will organize a one-day workshop on life-cycle refrigerant management, to be held back to back with the Thirty-Sixth Meeting of the Parties.

15. In response to the request set out in paragraph 1 of decision XXXV/11, the Technology and Economic Assessment Panel established a task force. A summary of the task force report will be provided in the addendum to the present note. The Open-ended Working Group may wish to consider the report, while noting that the workshop on life-cycle refrigerant management will be organized by the Secretariat back to back with the Thirty-Sixth Meeting of the Parties.

Agenda item 5

Enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol (decision XXXV/14)

16. The Thirty-Fifth Meeting of the Parties resumed discussions on enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol, taking into

consideration the Secretariat's report on the matter, prepared for the forty-fifth meeting of the Open-ended Working Group in response to decision XXXIII/4, in consultation with experts in atmospheric monitoring of controlled substances,¹ and the report prepared by the Technology and Economic Assessment Panel in response to decision XXXIV/5.²

17. Subsequently, the Thirty-Fifth Meeting of the Parties adopted decision XXXV/14, by which the Secretariat was requested, in consultation with the Multilateral Fund secretariat and relevant experts from the Ozone Research Managers, the Scientific Assessment Panel and the Technology and Economic Assessment Panel, to provide the following information to the parties at the forty-sixth meeting of the Open-ended Working Group:

(a) An update of the information provided under decision XXXIII/4, including refining, to the extent possible, the cost estimates associated with enhancing atmospheric monitoring presented in the decision XXXIII/4 report, and providing a list of potential monitoring station locations;

(b) Options for sustainable funding to establish new regional monitoring capacities, including an assessment of their advantages and disadvantages and of potential implementation options and a description of the administrative processes required to operationalize any potential funding options considered, taking into account the discussion at the Thirty-Fifth Meeting of the Parties.

18. On 23 February 2024, the Ozone Secretariat and the steering committee of the European-Union funded pilot project on regional quantification of emissions of substances controlled under the Montreal Protocol organized an online workshop on costs of atmospheric monitoring of gases controlled under the Montreal Protocol. A summary of the results of the workshop will be included in the Secretariat's response to decision XXXV/14, and a full report on the workshop will be available as a background document for the forty-sixth meeting of the Open-ended Working Group.

19. A summary of the Secretariat's response to decision XXXV/14 will be included in the addendum to the present note. The Open-ended Working Group may wish to consider the information provided by the Secretariat and recommend a way forward.

Agenda item 6

Presentation and discussion of the Technology and Economic Assessment Panel 2024 progress report

(a) Nominations for critical-use exemptions for methyl bromide for 2025

20. One nomination for a critical-use exemption has been submitted for 2025, by Canada, which has requested 2,850 kg of methyl bromide to use as a pre-plant fumigant for soil used to grow strawberry runners.

21. During its meeting held from 11 to 14 March 2024 in Ho Chi Minh City, Viet Nam, the Methyl Bromide Technical Options Committee of the Technology and Economic Assessment Panel reviewed, among other things, the critical-use nomination and any additional information submitted by the nominating party. The interim recommendation on the quantity of methyl bromide eligible for exemption will be included in the Committee's report, to be made available in volume 2 of the Technology and Economic Assessment Panel 2024 report. The recommendation, which is expected to be finalized by mid-May 2024, will be summarized in the addendum to the present note, for consideration by the Open-ended Working Group.

(b) Energy efficiency (decision XXXV/10)

22. The Thirty-Fifth Meeting of the Parties considered the outcomes of the workshop on energy efficiency held on 22 October 2023 pursuant to paragraph 4 (a) of decision XXXIV/3. The outcomes of the workshop were summarized in document UNEP/OzL.Pro/Workshop.12/3/Rev.1–UNEP/OzL.Pro.35/11/Rev.1. A background note on existing policies addressing interlinkages between phasing down hydrofluorocarbons and enhancing energy efficiency (UNEP/OzL.Pro/Workshop.12/2–UNEP/OzL.Pro.35/10) and a note by the Secretariat entitled “Existing policies addressing

¹ Set out in document UNEP/OzL.Pro.WG.1/45/2/Add.2.

² See section 5.3: Response to decision XXXIV/5: Identification of gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring, in “Report of the Technology and Economic Assessment Panel, May 2023, volume 1: progress report”. Available at <https://ozone.unep.org/system/files/documents/TEAP-May2023%20Progress%20Report.pdf>.

interlinkages between phasing down hydrofluorocarbons and enhancing energy efficiency: case studies” (UNEP/OzL.Pro/Workshop.12/INF/1–UNEP/OzL.Pro.35/INF/9) were also considered by the parties.

23. The Thirty-Fifth Meeting of the Parties adopted decision XXXV/10 on energy efficiency, requesting the Technology and Economic Assessment Panel to include in its 2024 progress report updates on the information identified in paragraph 1 (a) of decision XXXIV/3, taking into account discussions at the Thirty-Fifth Meeting of the Parties.

24. In response to that request, the Technology and Economic Assessment Panel will include the information requested in its 2024 progress report. A summary of the Panel’s response will be included in the addendum to the present note. The Open-ended Working Group may wish to continue considering the topic of energy efficiency in the light of that response and recommend a way forward, as appropriate.

(c) Panel membership changes

25. Volume I of the 2024 report of the Technology and Economic Assessment Panel (the progress report) is expected to contain information on the membership of the Technology and Economic Assessment Panel and its technical options committees, including the term of appointment of each member; the expertise available in each committee; and the matrix of needed expertise of the Panel and its technical options committees. As requested in decision XXXI/8, entitled “Terms of reference of the Technology and Economic Assessment Panel and its technical options committees and temporary subsidiary bodies – procedures relevant to nominations”, the Panel is expected to provide, in its 2024 report, a summary outlining the procedures that the Panel and its technical options committees have undertaken to ensure adherence to the Panel’s terms of reference through clear and transparent procedures.

26. Information about changes in membership of the Technology and Economic Assessment Panel will be summarized in the addendum to the present note for consideration by the Open-ended Working Group, together with the matrix of needed expertise.

(d) Any other issues

27. Any party wishing to raise any other issues related to the Panel’s 2024 progress report for discussion at the forty-sixth meeting of the Open-ended Working Group is requested to raise them at the time of adoption of the agenda at the meeting itself, and to ask for the inclusion of those issues on the agenda, as appropriate.

Agenda item 7

Future availability of halons and their alternatives (UNEP/OzL.Pro.35/12, para. 159)

28. At its forty-fifth meeting, the Open-ended Working Group considered the report provided by the Fire Suppression Technical Options Committee of the Technology and Economic Assessment Panel, set out in section 3 of volume 1 of the Panel’s May 2022 progress report and its 2022 quadrennial assessment report.

29. The Thirty-Fifth Meeting of the Parties further discussed the issue of future availability of halons and their alternatives. During the discussion, a number of representatives expressed concern about the information provided in the Panel’s report on the long-term availability of halons and the revisions to the predicted timelines for running out of halons. One of them drew attention to the fact that, in every scenario, the potential estimated date for running out of halon 1301 had moved closer and the worst-case scenario saw halons running out by 2030. He also noted that there were some data gaps on emissions, including from possible use of halon 1301 as a feedstock. Another representative requested information and advice on the procurement of recycled and recovered halon for his country’s domestic aviation industry. The representatives were of the view that those issues deserved careful consideration. Because of the time constraints at the Thirty-Fifth Meeting of the Parties, parties agreed to include the item on the agenda of the forty-sixth meeting of the Open-ended Working Group. A summary of the discussion during the Thirty-Fifth Meeting of the Parties is set out in paragraphs 157 to 159 of the report of the meeting (UNEP/OzL.Pro.35/12).

30. The Open-ended Working Group may wish to discuss the issue of future availability of halons and their alternatives further and recommend a way forward, as appropriate.

Agenda item 8

Possible compliance deferral for Article 5, group 2 parties: technology review by the Technology and Economic Assessment Panel pursuant to paragraph 5 of decision XXVIII/2

31. In paragraph 5 of decision XXVIII/2 related to the amendment phasing down hydrofluorocarbons, the Technology and Economic Assessment Panel was requested to conduct a technology review four or five years before 2028 to consider a compliance deferral of two years from the freeze date of 2028 for Article 5, group 2, parties to address growth above a certain threshold in relevant sectors.
32. The response of the Technology and Economic Assessment Panel will be included in its 2024 progress report, and will be presented by the Panel at the forty-sixth meeting of the Open-ended Working Group. A summary of the response will be provided in the addendum to the present note.
33. The Open-ended Working Group may wish to consider the response of the Technology and Economic Assessment Panel and recommend a way forward, as appropriate.

Agenda item 9

Strengthening Montreal Protocol institutions, including combating illegal trade (decision XXXV/12 and UNEP/OzL.Pro.35/12, para. 188)

34. The Thirty-Fifth Meeting of the Parties adopted decision XXXV/12 on further strengthening Montreal Protocol institutions, including for combating illegal trade, following discussions that began at the forty-fifth meeting of the Open-ended Working Group on the outcomes of the workshop on strengthening the effective implementation and enforcement of the Montreal Protocol. The workshop had been held on 2 July 2023 in accordance with a request in decision XXXIV/8. In paragraph 1 of decision XXXV/12, parties were encouraged to facilitate the exchange of information on best practices to prevent illegal trade of controlled substances and to inform the Secretariat of practices used by entities attempting unauthorized imports of controlled substances, which might include the mislabelling of containers of controlled substances or misreporting of controlled substances on customs declarations. In paragraph 2 of the decision, the Secretariat was requested to provide, before the forty-sixth meeting of the Open-ended Working Group and on an annual basis thereafter, a compilation of information provided by parties pursuant to paragraph 1 of decision XXXV/12 as well as decision XXXIV/8.
35. The Thirty-Fifth Meeting of the Parties agreed to include the matter of strengthening Montreal Protocol institutions on the agenda of the forty-sixth meeting of the Open-ended Working Group.
36. In accordance with the request in paragraph 2 of decision XXXV/12, the Secretariat will make information provided by parties pursuant to paragraph 1 of the decision available as document UNEP/OzL.Pro.WG.1/46/4. The document will include any available information related to decision XXXV/12 and other decisions concerning illegal trade in controlled substances (i.e. decisions XIV/7, XXXI/3 and XXXIV/8), including information on cases of illegal trade that are not fully proven, that is submitted by parties by 22 March 2024, as requested by the Secretariat in its letter dated 16 February 2024. As of the date of the present note, seven parties had responded to the letter, with one party reporting cases of illegal trade and the rest informing the Secretariat that no such cases had been documented within their countries.
37. The Open-ended Working Group may wish to consider the information presented in document UNEP/OzL.Pro.WG.1/46/4, as well as any other relevant issues, and take the discussion forward, as appropriate.

Agenda item 10

Emissions of HFC-23: potential changes to reporting form 3 for reporting on HFC-23 (decision XXXV/7, para. 3)

38. At its forty-fifth meeting, the Open-ended Working Group discussed the issue of unexplained emissions of HFC-23 based on the findings of the Scientific Assessment Panel in its 2022 quadrennial assessment. The Thirty-Fifth Meeting of the Parties continued consideration of the topic of emissions of HFC-23, including a draft decision introduced by the representative of the United States of America on behalf of the United States as well as Australia, Canada and Norway, and adopted decision

XXXV/7. In paragraph 3 of decision XXXV/7, the Secretariat was requested to provide options for consideration by the parties with respect to potential changes to reporting form 3, specifically concerning when HFC-23 is generated, destroyed or maintained as stocks.

39. Options for potential changes to reporting form 3 will be presented in document UNEP/OzL.Pro.WG.1/46/3, for consideration by the parties.

III. Issues relevant to the Thirty-Sixth Meeting of the Parties, including updates on the implementation of previous decisions

A. Emissions of HFC-23 (decision XXXV/7)

40. The Thirty-Fifth Meeting of the Parties adopted decision XXXV/7, in which it requested the Scientific Assessment Panel to provide an update on HFC-23 emissions into the atmosphere and atmospheric concentrations to supplement the information in the 2022 quadrennial assessment report, including by reflecting any new information regarding atmospheric monitoring and atmospheric modelling, with its underlying methodology, including in quantifiable terms, with respect to such emissions, and taking into account information reported under paragraph 3 *ter* of Article 7 by all parties that manufactured Annex C, Group I and/or Annex F substances, and to prepare a report on the matter to the Thirty-Sixth Meeting of the Parties.

41. In the same decision, the parties requested the Technology and Economic Assessment Panel to prepare a report to the Thirty-Sixth Meeting of the Parties containing information regarding:

(a) The quantity of HFC-23 being consumed, by country and by sector;

(b) Updated estimates on the amounts of HFC-23 generated at and emissions from HCFC 22 production facilities including methodology with respect to such emissions, taking into account information reported under paragraph 3 *ter* of Article 7 by all parties that manufactured Annex C, Group I and/or Annex F substances, as well as information from other sources.

42. The issue will be included on the agenda of the Thirty-Sixth Meeting of the Parties. The panels' reports are expected to be available around the end of August 2024, and a summary of the reports will be included in the note by the Secretariat for the Thirty-Sixth Meeting of the Parties.

B. Combined thirteenth meeting of the Conference of the Parties to the Vienna Convention and Thirty-Sixth Meeting of the Parties to the Montreal Protocol

43. The twelfth meeting of the Ozone Research Managers will be organized by the Secretariat in cooperation with the World Meteorological Organization. The meeting will be held from 24 to 26 April 2024 in Geneva. The objective of the meeting is to review ongoing national and international research and monitoring programmes, to ensure the proper coordination of those programmes and to identify gaps that need to be addressed. The recommendations arising from the meeting will be communicated to and considered by the Conference of the Parties to the Vienna Convention at its thirteenth meeting, to be held jointly with the Thirty-Sixth Meeting of the Parties to the Montreal Protocol, in Bangkok, from 28 October to 1 November 2024.

44. Associated meetings to take place in Bangkok in conjunction with the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention and Thirty-Sixth Meeting of the Parties to the Montreal Protocol are:

(a) The seventy-third meeting of the Implementation Committee, to be held on 25 October 2024;

(b) The workshop on life-cycle refrigerant management called for by the parties in decision XXXV/11, to be held on 27 October 2024.

45. The Secretariat has begun discussions with the conference support team on the logistical arrangements for the meetings and the workshop at the United Nations Conference Centre in Bangkok. The arrangements will be finalized in a timely manner prior to the start of the meetings and the workshop.