



Distr.: General

11 June 2021

English only

**United Nations
Environment
Programme**

**Ozone Research Managers of the
Parties to the Vienna Convention for the
Protection of the Ozone Layer
Eleventh meeting, part II**
Online, 19–23 July 2021

Overview of issues relevant to the work of the Ozone Research Managers that have arisen since their tenth meeting

Note by the Secretariat

I. Introduction

1. Owing to the coronavirus disease (COVID-19) pandemic, the eleventh meeting of the Ozone Research Managers could not be held in person in April 2020, as had originally been planned, and was subsequently postponed twice. Given the parties' interest in issues related to gaps in the global coverage of atmospheric monitoring of controlled substances, set out under session 4 of the provisional agenda of the meeting entitled "International monitoring programmes: looking ahead",¹ the co-chairs of the tenth meeting of the Ozone Research Managers, in consultation with the co-chairs of the Scientific Assessment Panel of the Montreal Protocol on Substances that Deplete the Ozone Layer and the Ozone Secretariat, decided to convene an online meeting to allow for the presentation and initial discussion of those issues. That online meeting, held in October 2020, was designated part I of the eleventh meeting with the current meeting representing part II.

2. The present note provides an overview of issues that are relevant to the work of the Ozone Research Managers and have been addressed by the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer since the tenth meeting of the Ozone Research Managers in 2017. The issues comprise:

(a) Matters related to the recommendations of the Ozone Research Managers at their tenth meeting and on the General Trust for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention (hereinafter the "Trust Fund"), considered by the Conference of the Parties to the Vienna Convention at its eleventh meeting, which was held jointly with the Twenty-Ninth Meeting of the Parties to the Montreal Protocol, in November 2017;

(b) The findings of the 2018 assessment reports of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel, and their synthesis report, considered by the parties in 2019;

(c) Identification by the Scientific Assessment Panel and the Ozone Research Managers of gaps in the global coverage of atmospheric monitoring of controlled substances and of options on ways to enhance such monitoring, as requested by the Thirty-First Meeting of the Parties to the Montreal Protocol in November 2019 in its decision XXXI/3.

¹ UNEP/OzL/Conv.ResMgr/11(II)/1.

3. The outcomes of the eleventh meeting, part II, along with any recommendations, will be presented for consideration to the Bureau of the twelfth meeting of the Conference of the Parties to the Vienna Convention, which will convene in the margins of the combined twelfth meeting of the Conference of the Parties to the Vienna Convention (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol in October 2021, and will subsequently be presented to the combined meeting, as appropriate. The parties will consider the recommendations of the Ozone Research Managers and may take any relevant decisions.

II. Matters related to the work of the Ozone Research Managers and the Trust Fund considered by the Conference of the Parties to the Vienna Convention at its eleventh meeting

4. At its eleventh meeting, in November 2017, the Conference of the Parties considered the recommendations that had been adopted by the Ozone Research Managers at their tenth meeting, in March 2017, as well as the status of the Trust Fund and its activities and the work of the Advisory Committee of the Trust Fund. The parties' deliberations resulted in the adoption of decisions XI/1 and XI/2 by the Conference of the Parties, the key provisions of which are outlined below.

A. Decision XI/1: Recommendations of the tenth meeting of the Ozone Research Managers of the Parties to the Vienna Convention

5. At their tenth meeting, the Ozone Research Managers adopted a comprehensive set of recommendations encompassing four overarching goals and several actions related to research needs, systematic observations, data archiving and stewardship, and capacity-building. Those recommendations were recorded in the report of that meeting² and were reproduced in a separate working document for the consideration of the Conference of the Parties at its eleventh meeting in November 2017.³

6. Recognizing the importance of those recommendations, the Conference of the Parties adopted decision XI/1 in which parties were encouraged to adopt and implement them, as appropriate, and to accord priority to:

(a) Research and systematic observation activities on processes influencing the evolution of the ozone layer and its links to climate, including the prioritization of new measurement locations to optimize the co-location of ozone measurements with observations of other atmospheric species and parameters;

(b) Capacity-building activities in developing countries and countries with economies in transition, in particular through the continuation and expansion of regular calibration and intercomparison campaigns and through the provision of assistance to enable those parties to expand their scientific capacity and participate in ozone research activities, including assessment activities under the Montreal Protocol.

7. In addition, the national ozone focal points were encouraged to improve communication with the meteorological agencies and other relevant organizations in their countries on monitoring, research and scientific activities.

8. It is expected that the various presentations to be delivered at the present meeting will reflect the progress that has been made in implementing the recommendations adopted by the Ozone Research Managers at their tenth meeting, as well as the relevant decisions adopted by the Conference of the Parties at its eleventh meeting. Moreover, the parties are expected to address those issues in their national reports, submitted for consideration by the Ozone Research Managers at part II of their eleventh meeting.

B. Decision XI/2: General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention

9. In accordance with its mandate, set out in decision X/3 of the Conference of the Parties to the Vienna Convention, the Advisory Committee of the Trust Fund developed its long-term strategy and short-term plan of action for the Trust Fund and presented them to the Conference of the Parties at its eleventh meeting, in November 2017, after receiving feedback from the Ozone Research Managers at

² <http://conf.montreal-protocol.org/meeting/orm/10orm/report/English/10ORM-REPORT.pdf>.

³ <http://conf.montreal-protocol.org/meeting/mop/cop11-mop29/presession/English/COP-11-5E.doc>.

their tenth meeting in March 2017.⁴ The long-term strategy for the Trust Fund is available as a background document for the consideration of the Ozone Research Managers at their eleventh meeting.⁵

10. In the light of the Advisory Committee's work, the Conference of the Parties adopted decision XI/2, in which it requested the Committee, with the assistance of the World Meteorological Organization (WMO) and the Secretariat, to implement its long-term strategy and short-term plan of action for the Trust Fund, paying particular attention to:

- (a) Identifying gaps and needs in research and monitoring of ozone and related climate variables and parameters, complementing the ongoing efforts of the Ozone Research Managers of the Parties to the Vienna Convention and other relevant programmes such as the WMO Global Atmosphere Watch programme;
- (b) Exploring the use of new and cost-effective instrumentation to replace ageing instruments with regard to the projects under consideration by the Advisory Committee;
- (c) Fostering stronger relationships with scientific institutions and related global networks to build capacity and the infusion of knowledge for the activities under its consideration;
- (d) Developing a strategic plan for mobilizing public and financial resources and in-kind contributions for the Trust Fund, to safeguard necessary research and observation activities, and submit it to the Conference of the Parties to the Vienna Convention at its twelfth meeting and inform the parties to the Convention annually through the Secretariat on the progress made.

11. In implementing the short-term plan of action for the Trust Fund, the Advisory Committee has assessed and documented the achievements to date in terms of implementation and sustainability of the activities approved under the Trust Fund, with a view to identifying gaps and needs in the fields of research and systematic observations. Furthermore, it has considered potential sources of funding, other than voluntary contributions made by parties, and has provided feedback on all activities under its purview.⁶ Work on the implementation of the long-term strategy for the Trust Fund is under way; an update will be presented by the Chair of the Committee to the Ozone Research Managers at their eleventh meeting, and a full report will be submitted to the Conference of the Parties at its twelfth meeting, part II, in October 2021.

III. Main findings of the 2018 assessment reports of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel

12. In 2019, the parties to the Montreal Protocol considered the findings of the following three 2018 quadrennial assessment reports:

- (a) *Scientific Assessment of Ozone Depletion: 2018 and Scientific Assessment of Ozone Depletion: 2018 – Executive Summary*, prepared by the Scientific Assessment Panel;⁷
- (b) *Environmental Effects and Interactions of Stratospheric Ozone Depletion, UV Radiation, and Climate Change: 2018 Assessment Report*, prepared by the Environmental Effects Assessment Panel;⁸
- (c) *Technology and Economic Assessment Panel: 2018 Assessment Report*, prepared by the Technology and Economic Assessment Panel.⁹

13. The Thirty-First Meeting of the Parties, held in November 2019, also considered a synthesis report that highlighted the main findings of the above-mentioned reports. The individual assessment reports are available on the web pages of the respective panels on the website of the Ozone

⁴ <http://conf.montreal-protocol.org/meeting/mop/cop11-mop29/presession/English/COP-11-6E.docx> - section E and annex.

⁵ http://conf.montreal-protocol.org/meeting/orm/11orm/SiteAssets/VCTF_Long-term%20strategy.docx.

⁶ Information on the activities/project proposals that have been assessed by the Advisory Committee is included in document: UNEP/OzL/Conv.ResMgr/11/2.

⁷ Available at <https://ozone.unep.org/science/assessment/sap>.

⁸ Available at <https://ozone.unep.org/science/assessment/ecap>.

⁹ Available at http://conf.montreal-protocol.org/meeting/owg/owg-41/presession/Background-Documents/TEAP_2018_Assessment_Report.pdf.

Secretariat.¹⁰ The synthesis report, prepared by the co-chairs of the assessment panels, is available on the meeting portal as a background document for the consideration of the Ozone Research Managers.¹¹ Furthermore, the Thirty-First Meeting of the Parties adopted decision XXXI/2 on the potential areas of focus for the 2022 quadrennial reports of the Montreal Protocol's three assessment panels.¹²

14. The main findings the 2018 quadrennial assessment reports, summarized in the synthesis report, are outlined below:

- (a) Actions taken under the Montreal Protocol have led to decreases in the atmospheric abundance of controlled ozone-depleting substances and the start of the recovery of stratospheric ozone. The Protocol contributes to environmental sustainability and human health and well-being, in line with many Sustainable Development Goals;
- (b) Full implementation of the Kigali Amendment will significantly decrease projected hydrofluorocarbon (HFC) emissions. Those emissions would have contributed substantially to climate change by 2100. Improvements in energy efficiency during the HFC phase-down have the potential to accelerate and further increase the climate benefits from the Kigali Amendment;
- (c) Global total CFC-11 emissions have increased unexpectedly, inconsistent with the expected release from banks, suggesting new global production not reported under the Montreal Protocol. Sources of carbon tetrachloride are now better understood, considerably closing the gap between known sources of emissions and estimates from atmospheric observations. While halon abundances are declining slowly, the demand for halon-1301 remains, which may not be met in the future without new production. The decline in atmospheric concentrations of methyl bromide has halted. The atmospheric abundances of a number of minor ozone depleting substances have been increasing; cumulatively, those compounds may eventually have an impact on stratospheric ozone;
- (d) Quantifying ozone-depleting-substance banks and the time course of their continued emissions is key to determining the pace of ozone layer recovery;
- (e) Foam production continues to increase with the ongoing transition from ozone-depleting substances to zero-ozone-depleting-potential and low-global-warming-potential blowing agents;
- (f) Stratospheric ozone depletion and climate change are linked because ozone-depleting substances are powerful greenhouse gases and climate change modifies stratospheric ozone. The timing and extent of the recovery of stratospheric ozone depends on future concentrations of ozone-depleting substances and greenhouse gases;
- (g) The continued success of the Montreal Protocol in protecting stratospheric ozone depends on continued compliance with the Protocol's provisions.

15. The Ozone Research Managers may wish to take into account the findings of the 2018 quadrennial assessment reports during their discussion at the present meeting.

IV. Gaps in the global coverage of atmospheric monitoring of controlled substances and options on ways to enhance such monitoring

16. Following the 2018 scientific findings on the unexpected emissions of CFC-11, the consumption and production of which was previously phased out globally in 2010, consideration of the matter by the parties led to the adoption of decisions XXX/3 in 2018 and XXXI/3 in 2019.

17. In decision XXX/3, the Scientific Assessment Panel was requested to present to the Thirty-Second Meeting of the Parties in 2020 a summary report on the unexpected increase of CFC-11 emissions pertaining to atmospheric monitoring and modelling, and information on potential sources of CFC 11 emissions. In the same decision, the Technology and Economic Assessment Panel was requested to provide to the Thirty-First Meeting of the Parties in 2019 a final report on potential sources of emissions of CFC-11 and related controlled substances, as well as from banks, that may have resulted in emissions of CFC-11 in unexpected quantities in the relevant regions.

¹⁰ <https://ozone.unep.org/>.

¹¹ <http://conf.montreal-protocol.org/meeting/orm/11orm/SiteAssets/Synthesis-of-the-2018-assessment-reports.docx>.

¹² <https://ozone.unep.org/treaties/montreal-protocol/meetings/thirty-first-meeting-parties/decisions/decision-xxxi2-potential>.

18. The Technology and Economic Assessment Panel presented its final report on the matter to the Thirty-First Meeting of the Parties, in November 2019,¹³ while the Scientific Assessment Panel was expected to do so at the Thirty-Second Meeting of the Parties, in November 2020. An updated report by the Technology and Economic Assessment Panel was also requested in decision XXXI/3, to be provided at the latter meeting.

19. Due to the pandemic, the Thirty-Second Meeting of the Parties was conducted online with a reduced agenda. The issue of CFC-11 was not discussed and was therefore deferred for consideration in 2021. The report by the Scientific Assessment Panel, requested in decision XXX/3, and the updated report by the Technology and Economic Assessment Panel, requested in decision XXXI/3, were prepared in April and May 2021, respectively, in order to incorporate the new scientific findings in articles published in 2021. The reports will be considered by the Thirty-Third Meeting of the Parties in October 2021.¹⁴ Online technical meetings, scheduled in July 2021 under the forty-third meeting of the Open-ended Working Group of the parties to the Montreal Protocol, will enable the Panels to present their reports and address parties' questions.

20. In decision XXXI/3, the parties also addressed issues related to the availability of data on the atmospheric monitoring of CFC-11 and gaps in the global coverage of atmospheric monitoring of substances controlled under the Montreal Protocol.

21. In paragraph 9 of decision XXXI/3, parties were invited to provide to the Ozone Secretariat, as soon as possible, any available CFC-11 atmospheric monitoring data that are relevant to the unexpected CFC-11 emissions, while the Secretariat was requested to make the data available to the parties.

22. In paragraph 8 of decision XXXI/3, reproduced below, the Scientific Assessment Panel and the Ozone Research Managers were requested to undertake specific actions as follows:

To request the Scientific Assessment Panel to work with the Ozone Research Managers at their meeting in 2020 to identify gaps in the global coverage of atmospheric monitoring of controlled substances and to provide options on ways to enhance such monitoring, as well as exploring options for informing the parties of preliminary information indicating unexpected emissions of controlled substances, for the consideration of the Thirty-Second Meeting of the Parties to the Montreal Protocol and the Conference of Parties to the Vienna Convention at its twelfth meeting, in 2020.

23. The issue of gaps in the global coverage of atmospheric monitoring of controlled substances and options to enhance such monitoring is included in session 4 of the provisional agenda of the meeting. To assist consideration of this issue, the Scientific Assessment Panel, in cooperation with experts in the atmospheric monitoring of controlled substances, prepared in 2020 a relevant white paper which was presented and discussed at part I of the eleventh meeting of the Ozone Research Managers in October 2020 (as noted in paragraph 1 above). Participants in that meeting raised a few suggested modifications and clarifications, which the authors would take into account in the preparation of a revised version prior to part II of the eleventh meeting. The Secretariat will post the revised version of the white paper on the meeting portal as soon as it is submitted by the Scientific Assessment Panel.

24. At part II of their eleventh meeting, the Ozone Research Managers are expected to continue working with the Scientific Assessment Panel to endorse the revised white paper and forward it along with the recommendations emanating from the meeting for consideration by the Conference of the Parties at its meeting in 2021.

¹³ http://conf.montreal-protocol.org/meeting/mop/mop-31/presession/Background%20Documents/TEAP-TF-DecXXX-3-unexpected_CFC11_emissions-september2019.docx.

¹⁴ <https://ozone.unep.org/system/files/documents/SAP-April-2021-report-on-the-unexpected-emissions-of-CFC-11.pdf>.

https://ozone.unep.org/system/files/documents/Final_TEAP-DecisionXXXI-3-TF-Unexpected-Emissions-of-CFC-11-may2021.pdf.