



Distr.: General
29 October 2021

Original: English



United Nations
Environment
Programme

Twelfth meeting of the Conference of
the Parties to the Vienna Convention
for the Protection of the Ozone Layer, part II
Online, 23–29 October 2021

Thirty-Third Meeting of the Parties to
the Montreal Protocol on Substances
that Deplete the Ozone Layer
Online, 23–29 October 2021

Report of the combined twelfth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer (part II) and Thirty-Third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer

Introduction

1. As the ongoing coronavirus disease (COVID-19) pandemic and related travel restrictions made it difficult for parties to meet in person, the Secretariat, in consultation with the Co-Chairs of the preparatory segment of the combined twelfth meeting (part II) of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, some parties, and the bureaux of the twelfth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Second Meeting of the Parties to the Montreal Protocol, decided to hold the combined twelfth meeting (part II) of the Conference of the Parties to the Vienna Convention and Thirty-Third Meeting of the Parties to the Montreal Protocol online, with a reduced agenda. The decision was communicated to the parties by the Ozone Secretariat in an updated contingency plan disseminated on 28 June 2021. Accordingly, the deliberations were held online from 23 to 29 October 2021.
2. The present report reflects the deliberations under the items included on the single agenda used for the combined meeting; any references to “the current meeting” should be understood to denote the combined meeting of the two bodies.

Part one: preparatory segment (23–28 October 2021)

I. Opening of the preparatory segment

3. The segment was opened by Ms. Vizminda Osorio (Philippines), Co-Chair, at 2 p.m.¹ on Saturday, 23 October 2021.
4. Opening remarks were delivered by Ms. Megumi Seki, Executive Secretary of the Ozone Secretariat. In her statement, Ms. Seki said that the Secretariat was examining the possibility of a return to face-to-face meetings in 2022, starting with an extended meeting of the Open-ended Working Group of the Parties to the Montreal Protocol in July, and would continue to monitor the situation closely with a view to confirming the arrangements to the parties at an appropriate time. Regardless of

¹ All times mentioned are Nairobi time (UTC + 3).

the format of meetings held in 2022, it would be an important year, as several matters had been deferred owing to the COVID-19 pandemic, including negotiations and decisions concerning the replenishment of the Multilateral Fund for the triennium 2021–2023. The terms of reference for the next study for the 2024–2026 replenishment would also be discussed in 2022. The excellent preparatory work of the previous months, for which she sincerely thanked the parties and all other stakeholders, had laid the foundations for fruitful discussions at the current meeting.

5. Noting that 15 October 2021 had marked the fifth anniversary of the adoption of the Kigali Amendment to the Montreal Protocol, she urged the 71 parties to the Protocol that had not yet ratified the Amendment to do so as soon as possible. The world was in the grip of a growing climate emergency, and greenhouse gas emissions were not yet falling at the rate needed to minimize future damage. The Protocol and the Amendment could play a key role in slowing climate change and achieving the Sustainable Development Goals.

6. Earlier in the year, in connection with the United Nations Food Systems Summit, the Secretariat had helped organize activities to promote sustainable cold chains under the Rome Declaration on the Contribution of the Montreal Protocol to Food Loss Reduction through Sustainable Cold Chain Development. A virtual exhibition on sustainable cold chains had been launched on the Secretariat's website and was currently being populated with information about relevant technologies.

II. Organizational matters

A. Attendance

7. The following parties to the Vienna Convention and the Montreal Protocol were represented: Afghanistan, Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Cabo Verde, Cambodia, Cameroon, Canada, Chile, China, Colombia, Congo, Costa Rica, Croatia, Cuba, Czechia, Democratic People's Republic of Korea, Denmark, Dominica, Dominican Republic, Ecuador, Egypt, Eritrea, Estonia, Eswatini, European Union, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guinea, Guinea-Bissau, Holy See, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Jamaica, Japan, Kenya, Kuwait, Kyrgyzstan, Latvia, Lebanon, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mauritius, Mexico, Micronesia (Federated States of), Montenegro, Morocco, Mozambique, Myanmar, Namibia, Netherlands, New Zealand, Nigeria, North Macedonia, Norway, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Saudi Arabia, Senegal, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Syrian Arab Republic, Thailand, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Vanuatu, Viet Nam, Yemen, Zimbabwe.

8. The following United Nations bodies and specialized agencies were also represented: secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol, United Nations Development Programme, United Nations Environment Programme, United Nations Industrial Development Organization, World Bank, World Meteorological Organization. The Ozone Research Managers' Co-Chairs, the Co-Chair of the Advisory Committee of the Vienna Convention Trust Fund for Research and Systematic Observation and representatives of the Montreal Protocol assessment panels also attended the meeting.

9. The following intergovernmental, non-governmental, industry, academic and other bodies were also represented: Alliance for Responsible Atmospheric Policy; ATMosphere; Carrier Global Corporation; Daikin; Environmental Investigation Agency; EX Research Institute Ltd.; Honeywell Advanced Materials; Industrial Technology Research Institute; Institute for Governance and Sustainable Development; International Energy Agency; International Pharmaceutical Aerosol Consortium; Lawrence Berkeley National Laboratory; Kulthorn Group; MEBROM Corporation; Manitoba Ozone Protection Industry Association; Natural Resources Defence Council; Nolan Sherry and Associates Ltd.; Perspectives Climate Research; Petra Engineering Industries; Quimobásicos S.A.; Shaffie Law and Policy LLC; SRF Ltd.; Strathclyde Centre for Environmental Law and Governance; Trans-Mond Environment Ltd.

B. Officers

10. The preparatory segment was co-chaired by Ms. Vizminda Osorio (Philippines) and Mr. Martin Sirois (Canada).

C. Adoption of the agenda of the preparatory segment

11. The following agenda for the preparatory segment was adopted on the basis of the provisional agenda set out in document UNEP/OzL.Conv.12(II)/1–UNEP/OzL.Pro.33/1:

1. Opening of the preparatory segment: statement by a representative of the United Nations Environment Programme.
2. Organizational matters:
 - (a) Adoption of the agenda of the preparatory segment;
 - (b) Organization of work.
3. Financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol.
4. Montreal Protocol issues:
 - (a) Replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol for the period 2021–2023;
 - (b) Unexpected emissions of trichlorofluoromethane (CFC-11);
 - (c) Identification of gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring (decision XXXI/3, para. 8);
 - (d) Nominations for methyl bromide critical-use exemptions for 2022 and 2023;
 - (e) Technology and Economic Assessment Panel membership changes;
 - (f) Compliance and reporting issues considered by the Implementation Committee;
 - (g) Energy-efficient and low-global-warming-potential technologies;
 - (h) Consideration of the membership of Montreal Protocol bodies for 2022:
 - (i) Membership of the Implementation Committee;
 - (ii) Membership of the Executive Committee of the Multilateral Fund;
 - (iii) Co-chairs of the Open-ended Working Group.
5. Vienna Convention issues:
 - (a) Report of the eleventh meeting of the Ozone Research Managers of the Parties to the Vienna Convention;
 - (b) Status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention.
6. Other matters.

D. Organization of work

12. The parties agreed to the organization of work proposed by the Co-Chairs, namely, to establish contact and informal groups as necessary; to avoid holding contact group meetings in parallel with one another or with plenary meetings; and to avoid, to the extent possible, the holding of simultaneous meetings of various groups. Contrary to standard practice, the proposed organization of work had been circulated in advance of the meeting, on 4 October 2021, to facilitate planning and preparations by delegations. The daily preparatory segment sessions would be held from 2 to 4 p.m., with the possibility for contact groups sessions to meet from 4.15 p.m. onward if necessary, and to close by 5.30 p.m. daily. Meetings of regional groups and informal and bilateral consultations on issues on the agenda could take place at any time, even outside the window reserved for the daily sessions.

III. Financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol

13. In considering the item, the parties had before them documents UNEP/OzL.Conv.12(II)/4 and UNEP/OzL.Pro.33/4, containing proposed revisions to the approved budgets for 2021 and to the proposed budgets for 2022 and 2023 and the triennium 2022–2024, together with activity fact sheets set out in document UNEP/OzL.Conv.12(II)/INF/1–UNEP/OzL.Pro.33/INF/1; the financial reports of the two trust funds for the fiscal year 2020, set out in document UNEP/OzL.Conv.12(II)/5–UNEP/OzL.Pro.33/5; and the updated indicative financial report for the fiscal year 2021 as at 30 September 2021, set out in document UNEP/OzL.Conv.12(II)/INF/2–UNEP/OzL.Pro.33/INF/2.

14. Introducing the item, the Co-Chair recalled that the parties reviewed the budget of the trust fund for the Montreal Protocol each year and the budget of the trust fund for the Vienna Convention every three years. The financial reports of both trust funds were reviewed annually. Given the COVID-19 pandemic, however, during the first part of the twelfth meeting of the Conference of the Parties to the Vienna Convention and Thirty-Third Meeting of the Parties to the Montreal Protocol, the parties had discussed and approved only the revised 2020 budgets of the two trust funds and the budgets for 2021. At the current meeting, the parties would consider the triennial budget for 2022–2024 for the Vienna Convention trust fund and the budgets for 2022 and 2023 for the Montreal Protocol trust fund.

15. The Co-Chair also recalled that the parties had been able to submit comments and questions to the Secretariat on the above-mentioned documents via an online forum dedicated to the issue of the budgets. Furthermore, in preparation for the current meeting, the Co-Chairs had convened informal online meetings to discuss the financial situations of the two trust funds, the funding scenarios and the budgets. All the additional information provided by the Secretariat through the forum or in response to questions raised during the informal meetings remained available for reference in the online forum.

16. The parties agreed to establish a budget committee to consider the two draft decisions on the final reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol set out in document UNEP/OzL.Conv.12(II)/3–UNEP/OzL.Pro.33/3. The committee would review the financial reports, the budgets, the funding scenarios and all other issues relevant to the budget decisions. It was later agreed that the committee would be chaired by Ms. Nicole Folliet (Canada).

17. Subsequently, the chair of the budget committee reported that the committee had reviewed and approved revised budgets for 2021 for the Vienna Convention and Montreal Protocol trust funds. In addition to approving budgets and contributions for the triennium 2022–2024 for the Vienna Convention trust fund and a budget and contributions for the year 2022 for the Montreal Protocol trust fund, the committee had approved the establishment of a permanent P-3 Information Technology Officer post to be funded by both trust funds at a ratio of 30/70, respectively, for the Vienna Convention and Montreal Protocol budgets.

18. Subsequently, the chair introduced revised versions of the two draft decisions, as set out in separate conference room papers.

19. The parties agreed to forward the draft decisions for further consideration and possible adoption during the high-level segment.

IV. Montreal Protocol issues

A. Replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol for the period 2021–2023

20. Introducing the sub-item, the Co-Chair noted that there were two related issues, concerning the updated report of the replenishment task force of the Technology and Economic Assessment Panel and the decision on replenishment of the Multilateral Fund. The replenishment report had been discussed during a briefing meeting held on 18 October 2021; the report on the briefing meeting (UNEP/OzL.Conv.12(II)/L.5–UNEP/OzL.Pro.33/L.5) was available on the meeting website. The second issue, relating to the replenishment of the Multilateral Fund, would be discussed at the current meeting. Three related draft decisions had been submitted for consideration at the meeting: one on contributions for 2022, proposed by Australia and the European Union (UNEP/OzL.Conv.12(II)/3/Add.6–UNEP/OzL.Pro.33/3/Add.6); another on the interim budget of the Multilateral Fund, proposed by Canada (UNEP/OzL.Conv.12(II)/3/Add.7–UNEP/OzL.Pro.33/3/Add.7); and a third on an extraordinary Meeting of the Parties, proposed by Norway (UNEP/OzL.Conv.12(II)/3/Add.8–UNEP/OzL.Pro.33/3/Add.8).

21. Representatives of the proponents then presented their submissions, which the parties then discussed. All the representatives who spoke during the discussion thanked the Secretariat for organizing and preparing for the meeting and the Co-Chairs for their extensive work in connection with the various preparatory sessions preceding the meeting. Many also thanked the proponents of the draft decisions for their submissions.

1. Draft decision submitted by Australia and the European Union

22. The representative of Australia introduced a draft decision, co-sponsored by the European Union, on the 2022 contributions to the Multilateral Fund for the triennium 2021–2023. She explained that certain parties wished to make a contribution to the Multilateral Fund in 2022 but needed a decision by the parties to provide a legal basis for doing so. The proposed decision, which was modelled on decision Ex.IV/1 on 2021 contributions to the Multilateral Fund, was intended to enable those parties to make a contribution in 2022. She emphasized that the proposed contributions shown in table A of the draft decision were based on those parties' contributions for the triennium 2018–2020 and did not reflect their positions on the 2021–2023 replenishment, which would be based on many factors, including the updated information provided by the Technology and Economic Assessment Panel in 2021, and would reflect the work to be done by parties to phase out hydrochlorofluorocarbons (HCFCs) and start phasing down hydrofluorocarbons (HFCs). In addition, any contributions made by parties prior to an agreement on the replenishment for 2021–2023 would count towards their overall contribution for that period and would not be additional to it.

23. Several representatives took the floor to support the proposed decision. Two of them expressed their appreciation for the continued support provided to the Multilateral Fund and to parties operating under paragraph 1 of Article 5 of the Montreal Protocol (Article 5 parties). Another suggested that parties explore the possibility of adopting the same replenishment amount for the triennium 2021–2023 as for 2018–2020, given that contributions for 2021 and 2022 were already based on those of the previous triennium.

24. The representative of New Zealand said that her Government, too, required the decision in order to make a contribution in 2022, and asked that her country be added as a co-sponsor of the draft decision to facilitate that contribution.

25. The parties agreed to forward the draft decision, as orally amended, for further consideration and possible adoption during the high-level segment.

2. Draft decision submitted by Canada

26. The representative of Canada introduced a draft decision on an updated interim budget for the Multilateral Fund for the triennium 2021–2023, recalling that the parties had taken a similar decision, decision XXXII/1, in 2020. The previous decision, which had mainly been based on the resources available from the previous triennium, required updating, both because new contributions had been received in 2021 pursuant to decision Ex.IV/1 and because the previous decision, while allocating the budget to the full triennium, had prioritized 2021. He presented the differences between the updated text and the previous decision and suggested an updated interim budget of \$400 million, nevertheless deferring to the Chief Officer of the Multilateral Fund secretariat for confirmation of the final figure.

27. The Chief Officer of the Multilateral Fund secretariat confirmed that the figure of \$400 million was appropriate and provided the underlying figures, noting that they had all been rounded to one decimal place. The updated interim budget figure was based on available resources of \$385.2 million as at 7 October 2021 and an additional \$20.9 million in funding for projects approved at the eighty-seventh meeting of the Executive Committee, less \$6.2 million in returned balances from bilateral and implementing agencies, for a total of \$399.9 million as an interim budget for the triennium 2021–2023, which could reasonably be rounded to \$400 million. He also informed parties that as at 7 October 2021, cash contributions for 2021 had stood at \$100.5 million.

28. The parties agreed to forward the draft decision, as orally amended, for further consideration and possible adoption during the high-level segment.

3. Draft decision submitted by Norway

29. The representative of Norway introduced a draft decision on authorizing the Secretariat to potentially convene an extraordinary Meeting of the Parties in 2022. Noting that the wording of the draft decision was very similar to that of decision XXXII/2 on the holding of an extraordinary Meeting of the Parties in 2021, he said that it would be useful to provide for an extraordinary Meeting of the Parties in 2022 to finalize the negotiation of the 2021–2023 replenishment, given the importance of the

replenishment. In addition, parties were expected to develop and decide on the terms of reference for the 2024–2026 replenishment period at their thirty-fourth meeting, and it would be preferable to finalize the replenishment negotiations before that, a consideration that was reflected in the third preambular paragraph of the draft decision. He added that the extraordinary meeting would ideally be held back to back with the forty-fourth meeting of the Open-ended Working Group, planned for July 2022.

30. During the ensuing discussion, many representatives voiced their support for the proposal, citing the need to finalize negotiations on the 2021–2023 replenishment before the Thirty-Fourth Meeting of the Parties and to take into account the persistent uncertainty surrounding the holding of in-person meetings in 2022, even though some had already taken place. The option of holding an extraordinary meeting online was also mentioned.

31. There was strong support for holding the meeting back to back with a planned meeting in general and with the meeting of the Open-ended Working Group in particular, given the timing of that meeting. One representative, noting the many international meetings planned for 2022, particularly in the chemicals and waste sector, suggested that the decision explicitly state that the meeting would be held back to back with the meeting of the Open-ended Working Group. Another representative supported that suggestion, but two others, supported by a third, said that, given the unpredictability of the pandemic, parties should leave the arrangements to the discretion of the Secretariat, which could be relied on to make the best arrangements possible in the light of the evolving circumstances.

32. Two representatives questioned the mention of the 2024–2026 replenishment discussions in the third preambular paragraph and the implied link with the 2021–2023 replenishment negotiations. Following a brief discussion, the proponent of the draft decision said that the paragraph was not needed and agreed to delete it.

33. The parties agreed to forward the draft decision, as orally amended, for further consideration and possible adoption during the high-level segment.

B. Unexpected emissions of trichlorofluoromethane (CFC-11)

34. Introducing the sub-item, the Co-Chair recalled that the Scientific Assessment Panel and the Technology and Economic Assessment Panel had produced up-to-date reports on the unexpected emissions of trichlorofluoromethane (CFC-11) for consideration by the Thirty-Second Meeting of the Parties, in 2020, but that consideration of those reports had been deferred to 2021 because of the pandemic. The panels had further updated their reports to reflect new information published in February 2021, and the updated reports had been considered in July 2021 at an online technical meeting organized as part of the forty-third meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/43/4/Add.1). The online technical meeting had focused solely on the technical aspects of the panels' reports, and parties were now being invited to discuss the associated policy issues.

35. Following the Co-Chair's introduction, participants viewed a presentation by Scientific Assessment Panel member Mr. Steve Montzka, speaking on behalf of the Panel, about recent trends in CFC-11 emissions. Mr. Montzka reported that the decline in atmospheric concentrations of CFC-11, which had accelerated after 2018 and into 2019, had continued through 2020 and the first part of 2021. In 2020, global CFC-11 emissions had been even lower than in 2019 and substantially below levels for the period 2008–2012, although it was to be noted that the magnitude of the drop from 2019 to 2020 was sensitive to 3D-modelled dynamics. The 2020 emissions were near expected levels, suggesting that much of the new use and production had stopped; however, the new CFC-11 banks that might have been created from the unexpected production could add to emissions for some time.

36. Many representatives, including one speaking on behalf of a group of countries, took the floor during the ensuing discussion. Most began by welcoming the updated information provided and thanked the Scientific Assessment Panel and the Technology and Economic Assessment Panel for their ongoing work, which was essential to parties' efforts to repair the ozone layer. Several noted that the panels were to deliver further updates in 2022 and their 2022 quadrennial reports were to be presented to the parties in 2023. Requesting the panels to provide further information through a decision would therefore not be necessary.

37. Many of those who spoke, including one representative speaking on behalf of a group of countries, said that, while the trend in CFC-11 emissions was encouraging, the parties and the scientific community would have to remain vigilant regarding CFC-11 as well as other controlled substances, including carbon tetrachloride (CTC), dichlorodifluoromethane (CFC-12) and eventually

HFCs. One representative, supported by several others, said that the situation with CFC-11 had revealed a need for compliance capacity-building and called for additional assistance in that regard.

38. Several representatives, including one speaking on behalf of a group of countries, registered their concern regarding the augmented CFC-11 banks, which would have an impact for many years to come. One urged parties to ensure that their national legislation provided for proper emissions control during the destruction of insulating foams containing CFC-11.

39. Several representatives cautioned that any additional global efforts to monitor the controlled substances in the atmosphere should not place any additional monitoring and reporting burden on Article 5 parties. They said that the issue was complex and required full discussion at an in-person meeting, a position that two other representatives supported.

40. At the end of the discussion, the Co-Chair said that the points made would be reflected in the report of the meeting.

C. Identification of gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring (decision XXXI/3, para. 8)

41. Introducing the item, the Co-Chair drew attention to the information contained in paragraphs 40–43 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.12(II)/2 UNEP/OzL.Pro.33/2) and in section III of the annex to the note by the Secretariat on the recommendations of the Ozone Research Managers of the Parties to the Vienna Convention at their eleventh meeting (UNEP/OzL.Conv.12(II)/7). He said that in early October 2021 the European Union had submitted a draft decision on enhancing the global and regional atmospheric monitoring of CFC-11 and other substances controlled by the Montreal Protocol (UNEP/OzL.Conv.12(II)/3/Add.3–UNEP/OzL.Pro.33/3/Add.3), which had been posted in the online forum and on the meeting portal for parties' review ahead of the combined meetings. Following consultations with and receipt of input from other parties, the European Union had prepared a revised version of the draft decision (UNEP/OzL.Conv.12(II)/3/Add.3/Rev.1–UNEP/OzL.Pro.33/3/Add.3/Rev.1).

42. The representative of the European Union, introducing the revised draft decision, said that the issue of monitoring was closely linked to the unexpected emissions of CFC-11, as the atmospheric monitoring undertaken by the Scientific Assessment Panel had proved essential in detecting the problem and thus enabling it to be addressed. In preparing the draft decision, the European Union had looked at the issue of monitoring more broadly and considered it more relevant, in the future, to contain emissions of controlled substances at their source. Nonetheless, it recognized that such a topic was too broad and complex to be discussed in the current online meeting format, and it therefore requested the Secretariat to include the issue of monitoring and containment of controlled substances at source on the agenda of the first subsequent face-to-face meeting.

43. The draft decision aimed to improve the ability of the Scientific Assessment Panel to obtain data for its assessments, including by requesting parties to enhance their sharing of atmospheric monitoring data from existing measurement networks and to inform the Secretariat of any issues of relevance. It had been a conscious decision to limit the involvement of the Secretariat in the data-exchange process to avoid overburdening it. The Secretariat was, however, requested, in consultation with relevant experts, to provide a variety of information to the Open-ended Working Group, including the identification of suitable locations for additional monitoring, efforts for which the European Union had agreed to provide funding under a pilot project. In requesting the Scientific Assessment Panel to provide advice regarding which controlled substances should be prioritized for enhanced atmospheric monitoring on a regional basis, the European Union had reflected the views expressed during its consultations with parties on the importance of considering precursor substances such as carbon tetrachloride in order to obtain a more complete overview of the situation.

44. Several of the representatives who took the floor thanked the Scientific Assessment Panel for its paper entitled “Closing the gaps in top-down regional emission quantification: needs and action plan” and the European Union for its efforts to outline the first steps in the long process of enhancing global monitoring. The draft decision was deemed a good basis for reaching agreement on decision text at the current meeting. Some speakers stressed the importance of several of the elements to be addressed in the draft decision, including efforts to establish new monitoring stations in areas where there were gaps in the network and to ensure the open sharing of existing data, highlighting the key role of parties in those endeavours. One representative emphasized the need to preserve the integrity of

scientific monitoring information and to avoid the introduction of requirements that data be endorsed or confirmed.

45. One representative said that the text of the draft decision should be modified to bring greater clarity regarding the roles and mandates of the entities concerned and the data-sharing process and to prioritize monitoring of the production of controlled substances. Another representative said that he could support the draft decision on the understanding that all the entities concerned had been consulted and had agreed to undertake the actions requested of them.

46. Appreciation was expressed for the provision of funding by the European Union.

47. In response to a question about the impact on Article 5 parties of increased information-sharing, the representative of the European Union said that the proposed text did not establish any additional reporting requirements for national ozone units; it merely aimed to encourage the exchange of information generated by existing scientific monitoring stations for other purposes, thereby enhancing synergies.

48. In response to a comment by a representative who highlighted the need for scientific and technical capacity-building to ensure that all countries could participate in global monitoring efforts, the Co-Chair recalled that capacity-building activities in developing countries and countries with economies in transition as per the recommendations of the Ozone Research Managers would be discussed under agenda item 5 (a) (report of the eleventh meeting of the Ozone Research Managers of the Parties to the Vienna Convention). Capacity-building support had been proposed in a related draft decision submitted by Australia (UNEP/OzL.Conv.12(II)/3/Add.4–UNEP/OzL.Pro.33/3/Add.4).

49. Noting the preference of certain representatives to take a final decision on the matter only when it was possible to hold discussions in person, the parties agreed to establish a contact group, co-chaired by Mr. Samuel Paré (Burkina Faso) and Ms. Ulrika Raab (Sweden), to discuss the proposed draft decision.

50. Subsequently, the co-chair of the contact group introduced a revised draft decision on enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol, as set out in a conference room paper.

51. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

D. Nominations for methyl bromide critical-use exemptions for 2022 and 2023

52. Introducing the sub-item, the Co-Chair said that four nominations for critical-use exemptions had been submitted in 2021: two by an Article 5 party, Argentina, for exemption in 2022, and two by parties not operating under paragraph 1 of Article 5 of the Montreal Protocol (non-Article 5 parties), Australia and Canada, for exemption in 2023 and 2022, respectively. An online forum had been opened by the Secretariat during June 2021 for discussion of the interim report by the Methyl Bromide Technical Options Committee of the Technology and Economic Assessment Panel on the evaluation of the 2021 nominations and related issues (volume 2 of the May 2021 report of the Panel). The report had been posted in the forum, and three parties had submitted comments. Subsequently, the Committee had carried out its final evaluation, and its final report had also been posted in the online forum during September 2021; comments had been received from two parties. The final report by the Committee was set out in volume 5 of the September 2021 report of the Technology and Economic Assessment Panel. A summary of the nominations and the final recommendations could be found in the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.12(II)/2/Add.1–UNEP/OzL.Pro.33/2/Add.1).

53. The co-chairs of the Methyl Bromide Technical Options Committee, Ms. Marta Pizano and Mr. Ian Porter, gave a presentation on the Committee's final assessment of critical-use nominations for methyl bromide. A summary of the presentation is set out in the annex to the present report.

54. In the ensuing discussion, the representative of Australia, thanking the Committee for its continuing hard work, said that he wished to make a correction to the information provided in the presentation regarding his country's transition plan. According to the plan, if methyl iodide was registered and available by 2023, Australia would reduce its methyl bromide use by 50 per cent in 2023 compared to the previous year and then eliminate its use entirely in 2024, which would allow time for training and the implementation of safety practices in 2022 and early 2023.

55. The representative of Canada said that his country supported the final recommendation issued to it by the Committee. Its research programme on soilless alternatives to methyl bromide in strawberry runner production would continue in 2022, building on the positive results achieved in the 2019 to 2021 growing seasons. Moreover, the grower would continue to undertake activities to identify solutions to issues encountered with soilless cultivation, such as the construction and optimization of greenhouses. Other outstanding challenges to be overcome before soilless cultivation could be implemented fully included its much higher capital and material cost, regardless of whether it was carried out indoors or outdoors, and the three-week lag in the development of soilless plants, resulting in harvests falling outside peak market windows. Canada would share additional developments and results from the research programme as they became available.

56. One representative, speaking on behalf of a group of countries, said that it was pleasing to see an overall decline in the number of nominations submitted. Nevertheless, it was clear that challenges remained. Recalling that the Methyl Bromide Technical Options Committee had identified opportunities for replacing 30 to 40 per cent of quarantine and pre-shipment uses of methyl bromide with immediately available alternatives, he requested that consideration of the issue be placed on the agenda of the next meeting of the Open-ended Working Group. The use and disclosure of stocks of methyl bromide held globally for controlled uses by Article 5 parties should also be the subject of a thorough discussion at the next meeting of the Open-ended Working Group. Lastly, it would be interesting to know why no detailed management plan had been received from Argentina.

57. Mr. Porter said that, although Argentina had not submitted a plan, it had reduced its use of methyl bromide dramatically and had indicated in its submissions to the Committee the alternatives that it was using. The Committee had therefore decided that it would be sensible to issue a recommendation despite the absence of a plan. He recalled, however, that Article 5 countries were required to submit national management plans if they wished to apply for critical-use exemptions.

58. The representative of Argentina said that she wished to thank the Committee for its final report and for acknowledging her country's efforts to reduce its methyl bromide use.

59. The representative of Canada introduced a draft decision on critical-use exemptions for 2022 and 2023, co-sponsored by Australia and set out in a conference room paper. Noting that the proponent countries had also consulted with the European Union, he expressed appreciation for that input. Further consultations would be needed to discuss some minor amendments to the draft decision proposed by the European Union. He confirmed that the amounts subject to the critical-use exemptions in the draft decision were those recommended by the Methyl Bromide Technical Options Committee.

60. The parties agreed to forward the draft decision, as revised in the light of the additional consultations mentioned by the representative of Canada, for further consideration and possible adoption during the high-level segment.

E. Technology and Economic Assessment Panel membership changes

61. Introducing the sub-item, the Co-Chair drew attention to the information contained in the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.12(II)/2/Add.1–UNEP/OzL.Pro.33/2/Add.1) and in annex I of volume I of the September 2021 report of the Technology and Economic Assessment Panel. He recalled that the terms of nine members of the Panel, including six co-chairs of technical options committees and three senior experts, would expire at the end of 2021. The Secretariat had received nine nominations so far: two from Australia, one from Brazil, one from Colombia, one from Costa Rica, one from India, one from the Russian Federation, one from the United Kingdom of Great Britain and Northern Ireland and one from the United States of America. The Secretariat had consolidated the nominations and proposed the endorsement of the appointment of the nominees in a draft decision set out in a conference room paper. A matrix of needed expertise for 2021 was set out in annex 2 to the Panel's progress report and reproduced in annex III to the addendum to the note by the Secretariat.

62. In the ensuing discussion, one representative noted that the terms of appointment for senior experts varied from one to four years. Several representatives said that senior experts should be appointed for an additional term of one year only. One representative recalled that the approach of appointing senior experts for one year had first been adopted in 2020 in response to the difficulty of agreeing on appropriate term lengths for senior experts at online meetings. Given the continued impossibility of meeting in person, it made sense to follow that precedent for the time being.

63. One representative said that it would be helpful to know whether the nominees for senior expert positions possessed the expertise highlighted in the matrix. Another asked why the nominee for the position of co-chair of the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee had been put forward for an additional term of two years, whereas the nominees for the other five co-chair positions had been put forward for additional terms of four years.

64. The Co-Chair recalled that, in accordance with the terms of reference of the Technology and Economic Assessment Panel, candidates to be co-chairs of technical options committees could be nominated for a term of up to four years, meaning that a shorter term was possible. The Secretariat would amend the conference room paper to reflect the parties' preference for senior experts to be appointed for an additional term of one year only.

65. The parties agreed to forward the draft decision, as amended to reflect the discussion, for further consideration and possible adoption during the high-level segment.

F. Compliance and reporting issues considered by the Implementation Committee

66. The President of the Implementation Committee, Mr. Cornelius Rhein (European Union), presented a report on the outcomes of the sixty-sixth and sixty-seventh meetings of the Committee, which had taken place online in 2021, and provided an overview of the draft decisions approved by the Committee for consideration by the Thirty-Third Meeting of the Parties.

67. The Committee had heard updates from the Ozone Secretariat on data reporting and related matters, including the reporting obligations related to HFCs under the Kigali Amendment and information on the establishment of HFC licensing systems. It had also heard reports from the secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol on relevant decisions of the Executive Committee of the Fund and on activities carried out by the implementing agencies to facilitate compliance by parties.

68. The Implementation Committee had reviewed the implementation of existing decisions on non-compliance by the Democratic People's Republic of Korea, Kazakhstan, Libya and Ukraine, which were all required to undertake a number of measures decided on at previous meetings of the Committee in order to return to compliance. The Committee had also discussed the issue of reporting on the use of controlled substances as process agents pursuant to decision XXXII/5.

69. The President drew attention to a conference room paper setting out two draft decisions for consideration by the Thirty-Third Meeting of the Parties. The first, on data and information provided by the parties in accordance with Article 7 of the Montreal Protocol, noted with appreciation that 197 of the 198 parties to the Montreal Protocol had reported data for 2020, with 181 of those parties meeting the deadline of 30 September 2021 mentioned in paragraph 3 of Article 7, and 115 of the latter group of parties reporting by 30 June 2021, as parties were encouraged to do in decision XV/15. One party, Cuba, had not yet reported its 2020 data, which placed it in a situation of non-compliance with its annual reporting obligations. With regard to parties to the Kigali Amendment, two non-Article 5 parties, the Russian Federation and San Marino, had not yet submitted baseline data on HFCs for the years 2011 to 2013, and two Article 5 parties, Cuba and Lebanon, had yet to submit HFC baseline data for 2020. Those four parties were thus also in non-compliance with their reporting obligations for HFC baseline data. The draft decision urged the four parties in non-compliance to report the required data to the Secretariat as soon as possible and requested the Implementation Committee to review the situation of those parties at its sixty-eighth meeting.

70. The second draft decision related to the status of the establishment of licensing systems for the import and export of new, used, recycled and reclaimed HFCs in accordance with paragraph 2 bis of article 4B of the Montreal Protocol. It was commendable that 101 of 127 parties to the Kigali Amendment had established such licensing systems and that 10 parties to the Montreal Protocol that had not yet ratified the Kigali Amendment had also done so, which attested to the importance of such systems. A total of 17 parties to the Kigali Amendment, however, had not reported in time on the establishment of their licensing systems in accordance with the established deadlines. The draft decision, which listed those parties in its annex, therefore urged them to establish licensing systems as a matter of urgency, and no later than 15 March 2022, for consideration by the Committee at its sixty-eighth meeting. The draft decision also underlined the role of licensing systems in data collection and verification, the monitoring of imports and exports of controlled substances, and the prevention of illegal trade, and it urged all parties to the Kigali Amendment that had not yet established a licensing system to do so and report thereon to the Secretariat. The Secretariat was requested to review periodically the status of the establishment and implementation of such licensing systems.

71. In the ensuing discussion, the representative of one of the parties in non-compliance with its baseline data reporting obligations explained that the submission was late because of the political instability in her country, which was being run by a caretaker government. The country was working with industry and other stakeholders to gather the necessary information and would soon submit the data.

72. Two representatives cited issues faced by their countries in relation to the implementation and enforcement of such licensing systems, such as black-market trading and the management, including destruction, of substances and products seized from illegal trade. One of them asked whether the Implementation Committee would look into such issues, while the other highlighted the possible relevance of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

73. The President of the Implementation Committee explained that the Committee worked according to very strict rules of procedure. In his view, however, threats to the functioning of the compliance system, including issues related to enforcement of licensing systems and the management of seizures, were a topic that merited broad discussion by parties to ensure the effective implementation of the Montreal Protocol. Given the complexity of the issue, he was in favour of holding such discussions in person.

74. The parties agreed to forward the draft decisions for further consideration and possible adoption during the high-level segment.

G. Energy-efficient and low-global-warming-potential technologies

75. Introducing the sub-item, the Co-Chair recalled that, pursuant to decision XXXI/7, the Technology and Economic Assessment Panel had established a task force to prepare a report on new best practices, availability, accessibility and cost of energy-efficient technologies in the refrigeration, air-conditioning and heat-pump sectors for consideration by the Thirty-Second Meeting of the Parties. Because of the pandemic, consideration of the matter had been deferred, and the parties had considered an updated report at an online technical meeting on energy efficiency during the forty-third meeting of the Open-ended Working Group. The report on the online technical meeting (UNEP/OzL.Pro.WG.1/43/4/Add.2) was available on the website of the current meeting.

76. As the report prepared by the energy efficiency task force had already been fully discussed at the online technical meeting, the current meeting would focus on two related draft decisions that had been submitted for the parties' consideration: one on stopping environmentally harmful dumping of inefficient refrigerant and air conditioning appliances using obsolete refrigerants, proposed by Ghana on behalf of the African States that were parties to the Montreal Protocol (UNEP/OzL.Conv.12(II)/3/Add.1–UNEP/OzL.Pro.33/3/Add.1), and the other on continued provision of information on energy-efficient and low-global-warming-potential technologies, proposed by the United Kingdom (UNEP/OzL.Conv.12(II)/3/Add.2–UNEP/OzL.Pro.33/3/Add.2).

1. Draft decision submitted by Ghana on behalf of the African States parties to the Montreal Protocol

77. The representative of Ghana introduced a draft decision on stopping environmentally harmful dumping of inefficient refrigerant and air conditioning appliances using obsolete refrigerants. The rationale for the proposal was that dumping increased the HFC baseline for Article 5 parties, increased the use of HFCs and HCFCs in servicing, and made compliance with the Kigali Amendment more difficult. It also saddled Article 5 parties with increased costs and air pollution associated with energy inefficiency and non-Article 5 parties with higher Multilateral Fund replenishment costs. Africa was warming at a faster rate than the world overall and was at risk of multiple climate disasters. The proposed decision reflected a real problem that merited the respect of other parties and their immediate attention and cooperation.

78. Many representatives, including one speaking on behalf of a group of countries, took the floor to offer their thoughts on the draft decision. All acknowledged the importance of the issues raised, with several adding that those issues were important for all Article 5 countries, not just countries in Africa. Two welcomed the opportunity to take further action on energy efficiency and thus on climate change under the Montreal Protocol. One representative drew attention to similarities with previous substantive discussions by parties on the export to Article 5 countries of products and equipment containing chlorofluorocarbons (CFCs).

79. While all those who spoke indicated their willingness to enter into further discussions, many also expressed concern about the complexity of the topic, which covered issues that extended beyond the remit of the Montreal Protocol and touched on other international conventions, notably the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

80. Specific elements of the draft decision highlighted as having potential for action included proposals for further work by the Technology and Economic Assessment Panel; enhanced use of the OzonAction Informal Prior Informed Consent (iPIC) platform; and intensification of OzonAction training and coordination efforts. A specific element that prompted concern was the proposed enforcement, including through domestic legislation, of use of the iPIC platform, particularly given that the platform was not a mechanism under the Montreal Protocol.

81. Many representatives also voiced general concerns, including about the lack of clarity regarding what constituted “obsolete” ozone-depleting substances; the lack of clarity regarding whether the target was equipment containing ozone-depleting substances or inefficient equipment; the practical difficulty of distinguishing between desirable and undesirable equipment; the difficulty of addressing trade in cooling products based on energy efficiency under the Montreal Protocol; and the need to avoid overly onerous control measures.

82. While a few representatives suggested further discussion in a contact group at the current meeting, many, including one speaking on behalf of a group of countries, questioned whether such a complex topic could be adequately addressed at an online meeting. In the end, the parties agreed to put the matter on the agenda of their next in-person meeting to allow for in-depth exploration of the challenges underlying the proposal and of actions that could be taken under the Montreal Protocol to address those challenges.

2. Draft decision submitted by the United Kingdom

83. The representative of the United Kingdom introduced a draft decision, set out in document UNEP/OzL.Conv.12(II)/3/Add.2-UNEP/OzL.Pro.33/3/Add.2, on the continued provision of information on energy-efficient and low-global-warming-potential technologies. The draft decision contained two operative paragraphs. The first provided that the Technology and Economic Assessment Panel should be requested to prepare a report on energy-efficient and lower-global-warming-potential technologies and on measures to improve energy consumption in existing equipment for consideration by the Open-ended Working Group at its forty-fourth meeting. The second provided that the parties should be encouraged to review their national regulatory frameworks and take steps to prevent the importation of unwanted technologies relying on hydrochlorofluorocarbons and high-global-warming-potential hydrofluorocarbons, and to submit relevant national regulations and policies to the Secretariat.

84. In the ensuing discussion, several representatives expressed appreciation for the work done by the Technology and Economic Assessment Panel to provide information on energy-efficient and low-global-warming-potential technologies. Support was voiced for the continuation of that work, as requested in the first operative paragraph of the draft decision. Two representatives noted that issues pertaining to energy efficiency were also being addressed by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol.

85. Several representatives raised concerns regarding the second operative paragraph of the draft decision and the corresponding preambular paragraphs. One representative said that the operative paragraph appeared to be policy-prescriptive, while another questioned its relevance to the matter of energy efficiency. A third noted that some Article 5 parties would require additional funding to implement the measures called for in the paragraph.

86. Some representatives voiced a preference for deferring consideration of the draft decision to the next in-person meeting of the parties, in view of the detailed discussion that would be required, while others expressed support for the establishment of a contact group to discuss the draft decision at the current meeting.

87. One representative, recalling that energy efficiency was not a compliance obligation to be fulfilled by the parties under the Montreal Protocol, said that, if the parties were to request the Technology and Economic Assessment Panel to prepare a report on energy-efficient and lower-global-warming-potential technologies, they should bear in mind that many Article 5 countries were launching HFC phase-down plans. Phase-down should thus be the focus, whereas action to promote energy efficiency should be undertaken strictly based on national capacities and priorities. His delegation would be happy to participate in informal consultations on the draft decision.

88. One representative said that it was important to focus on improving the energy efficiency of refrigeration and air-conditioning equipment, while another noted that the emergence of new technologies and related standards had generated a considerable need for capacity-building in Article 5 countries, which would benefit from the support of the Technology and Economic Assessment Panel in that regard.

89. Another representative, speaking on behalf of a group of countries, noted that cutting emissions from cooling appliances would become an increasingly pressing issue in a warming world. Several parts of the draft decision were of great relevance, including the request for the Technology and Economic Assessment Panel to address, in its report, some subsectors not previously covered, such as the heat pump subsector, large commercial refrigeration, larger air-conditioning systems and foams; a reference to identifying options for improving energy consumption in existing equipment; and mention of a robust baseline assessment and verification of CO₂ reductions related to energy efficiency enhancements.

90. The parties agreed to establish a contact group, co-chaired by Mr. Patrick McInerney (Australia) and Mr. Leslie Smith (Grenada), to discuss the proposed draft decision.

91. Subsequently, the co-chair of the contact group introduced a revised draft decision on the continued provision of information on energy-efficient and low-global-warming-potential technologies, set out in a conference room paper.

92. The parties agreed to forward the revised draft decision for further consideration and possible adoption by the high-level segment.

H. Consideration of the membership of Montreal Protocol bodies for 2022

1. Membership of the Implementation Committee

93. Introducing the item, the Co-Chair said that the parties needed to decide on the membership of the Implementation Committee for 2022. A draft decision on the issue was set out in document UNEP/OzL.Conv.12(II)/3–UNEP/OzL.Pro.33/3.

94. Subsequently, the representative of the Secretariat reported that, upon receipt of the names of the nominations from the regional groups, the relevant draft decision would be included in the compilation of decisions for consideration and possible adoption by the parties during the high-level segment.

2. Membership of the Executive Committee of the Multilateral Fund

95. Introducing the item, the Co-Chair said that the parties needed to decide on the membership of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol for 2022. A draft decision on the issue was set out in document UNEP/OzL.Conv.12(II)/3–UNEP/OzL.Pro.33/3.

96. Subsequently, the representative of the Secretariat reported that, upon receipt of the names of the nominations from the regional groups, the relevant draft decision had been included in the compilation of decisions for consideration and adoption by the parties during the high-level segment.

3. Co-chairs of the Open-ended Working Group

97. Introducing the item, the Co-Chair said that the parties needed to decide on the co-chairs of the Open-ended Working Group for 2022. A draft decision on the issue was set out in document UNEP/OzL.Conv.12(II)/3–UNEP/OzL.Pro.33/3.

98. Subsequently, the representative of the Secretariat reported that, upon receipt of the names of the nominations from the Article 5 and non-Article 5 parties, the relevant draft decision had been included in the compilation of decisions for the parties' consideration and adoption during the high-level segment.

V. Vienna Convention issues

A. Report of the eleventh meeting of the Ozone Research Managers of the Parties to the Vienna Convention

99. The Co-Chair, presenting the sub-item, recalled that the Ozone Research Managers, at their eleventh meeting, had issued recommendations (UNEP/OzL.Conv.12(II)/7) covering systematic

observation, research, data archiving and stewardship, and capacity-building, as well as a fifth topic, gaps in atmospheric monitoring, which was being discussed as a separate issue at the current meeting, under agenda item 4 (c). Parties had discussed the recommendations at a briefing meeting held on 5 October 2021. In addition, an online forum had been opened to allow parties to review and comment on any draft decisions proposed in relation to the recommendations. Australia had taken advantage of the online forum to post a draft decision entitled “Recommendations of the eleventh meeting of the Ozone Research Managers of the Parties to the Vienna Convention”, which was set out in document UNEP/OzL.Conv.12(II)/3/Add.4–UNEP/OzL.Pro.33/3/Add.4 for the parties’ consideration.

100. The representative of Australia then presented the draft decision. She said that the meetings of the Ozone Research Managers were an opportunity for the Managers to discuss the status of ozone measurement and make recommendations to the parties on how to improve global ozone monitoring. For its eleventh meeting, the Ozone Research Managers had also been tasked, through decision XXXI/3, with identifying gaps in the global coverage of atmospheric monitoring of controlled substances and providing the parties with options for enhancing such monitoring. The proposed draft decision was a response to the recommendations arising from the eleventh meeting of the Ozone Research Managers. Although it might have been preferable to respond to the recommendations more comprehensively, the draft decision was based on a previous decision of the parties (decision VC XI/1), in recognition of the limitations of online meetings. She outlined the changes that had been made to the text of the previous decision to arrive at the draft decision presented for consideration. She also proposed the addition of the words “and under-monitored” in subparagraph 3 (b), in response to a recently received suggestion.

101. During the ensuing discussion, many representatives, including one speaking on behalf of a group of countries, thanked the representative of Australia for submitting the draft decision and welcomed the Ozone Research Managers’ recommendations, which several noted had been generated under particularly difficult circumstances. Except for a few representatives who requested clarifications, all those who contributed to the discussion supported the draft decision as presented, including the text added orally during the presentation.

102. Many of those who expressed support for the draft decision offered additional comments on the topic. Several emphasized the importance of building capacity for global ozone monitoring. Two stated their countries’ commitment to supporting and conducting ozone monitoring and sharing monitoring data, and a third affirmed her country’s strong support for the Ozone Research Managers and their work. One representative said that his delegation assigned particular importance to the Ozone Research Managers’ recommendations about increased funding of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, which linked to paragraph 3 (d) of the draft decision, and on enhanced monitoring of substances controlled under the Protocol, which also linked to agenda item 4 (c) on gaps in atmospheric monitoring and the draft decision put forward by the European Union on the matter.

103. Addressing the comments and requests for clarifications, the representative of Australia explained that the draft decision she had presented was specifically a Vienna Convention decision and an attempt to reflect, albeit in broad terms, the recommendations of the Ozone Research Managers without entering into questions of policy. Capacity-building for Article 5 parties, which a number of parties had flagged as important, was covered in operative paragraph 3 of the draft decision. Unlike the draft decision on enhancing the global and regional atmospheric monitoring submitted by the European Union under agenda item 4 (c), the draft decision under the sub-item currently under consideration was an attempt to address the technical aspects of ozone layer observation and controlled substance monitoring.

104. The representative of the European Union explained that his delegation’s submission to the parties of the Montreal Protocol under agenda item 4 (c) had arisen as a late reaction to the lessons learned from the discussions on the lack of sufficient monitoring. The overlap between the two draft decisions mentioned by several representatives was to be expected given the interconnection between the Vienna Convention and the Montreal Protocol. He was convinced that there were no inconsistencies in the work proposed in the two decisions, which was why his delegation fully supported the draft decision presented by Australia.

105. On the basis of the additional information provided, the representatives who had requested clarifications indicated their support for the draft decision as presented, and the parties agreed to forward the draft decision, as orally amended, for further consideration and possible adoption during the high-level segment.

B. Status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention

106. In considering the sub-item, the parties had before them a note by the Secretariat on the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention (UNEP/OzL.Conv.12(II)/8) and the note on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and Thirty-Third Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.12(II)/2–UNEP/OzL.Pro.33/2, paras. 73–77).

107. Introducing the sub-item, the Co-Chair recalled that the status of the Trust Fund had been presented by the Chair of the Advisory Committee of the Trust Fund during an online briefing on 5 October 2021. A page in the online forum had been opened from 13 September to 4 October 2021 to enable parties to review and comment on any related draft decisions submitted by parties. During that time, Australia had posted a draft decision, which was now set out in an addendum to the note by the Secretariat on draft decisions for consideration by the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.12(II)/3/Add.5–UNEP/OzL.Pro.33/3/Add.5).

108. The representative of Australia, introducing the draft decision, said that the Trust Fund was small but very important. It assisted Article 5 parties with their ozone observations and calibrations and enabled equipment to be relocated to countries interested in conducting observations, when it was considered that those observations would be useful for the scientific community. Given the difficulties inherent in negotiating in an online meeting format, the draft decision was closely based on the previous decisions taken with regard to the Trust Fund. There were, nevertheless, several notable new elements. Because of the importance of the Fund for improvement of the global ozone observation system, parties were invited to make contributions to it. The Advisory Committee of the Trust Fund was requested to pay particular attention, when implementing its long-term strategy and short-term plan of action, to facilitating the relocation of used Dobson and Brewer instruments to new observation programmes, when requested to do so and in line with global and regional observation priorities. The Committee was also requested to explore opportunities to leverage and catalyse its resources to safeguard necessary research and observation activities in line with its strategic plan; previously it had been requested to mobilize financial resources, but although it had worked hard to do so, such action was beyond its remit and its resources. No comments had been received on the draft decision after its posting in the online forum.

109. Several representatives, including one speaking on behalf of a group of countries, emphasized the importance of the Trust Fund and the support that it provided to developing countries. They noted the significant work that had been financed, such as calibration, intercomparisons of instruments, training, and the systematic exploration of new and cost effective instrumentation for ground-based observations of column ozone. In relation to the latter research, the representative speaking on behalf of a group of countries highlighted, first, the key finding that the ability to repair instruments and the infrastructure needed to field them were limited in developing countries and, second, the possible role of the Trust Fund in the future deployment to developing countries of the robust, environmentally friendly and inexpensive instruments that were likely to emerge in the coming decade. Given the crucial nature of the Trust Fund, one representative proposed that parties be encouraged, rather than simply invited, to contribute to it. Several other representatives expressed their support for changing the text accordingly.

110. The representative speaking on behalf of a group of countries noted the Trust Fund balance and expressed concern that some 80 per cent of the total income to the Fund since its inception in February 2003 had been disbursed or allocated to approved activities over that period. She stressed the need to reflect on the long-term sustainability of the Trust Fund in order to strengthen ozone observation and address the gaps in research and monitoring. Decision VC VI/2 stated that consideration should be given to supporting other activities identified by the Ozone Research Managers for the improvement of the observation network and relevant research. The group of countries she represented was therefore ready to consider possibilities for widening the use of the Trust Fund, which would require greater financial resources. In that connection, another representative highlighted the linkages between the resources available in the Trust Fund and parties' ability to undertake efforts to identify gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring.

111. Other representatives stressed the importance of funding research and monitoring activities in Article 5 parties, especially university-level research, and ensuring that parties in all regions received funding to enhance their monitoring efforts.

112. The parties agreed to forward the draft decision, as amended to reflect the discussion, for further consideration and possible adoption during the high-level segment.

VI. Other matters

113. No other matters had been raised at the time of the adoption of the agenda.

Tributes to Mr. Philip Owen and Mr. Eduardo Ganem

114. Tributes were paid to Mr. Philip Owen (European Union) and Mr. Eduardo Ganem (Chief Officer of the Multilateral Fund), for whom the current meeting would be the last in those capacities.

115. Mr. Owen was moving to another position with the European Commission, focusing on climate issues. In a statement, Ms. Seki said that, since Mr. Owen had begun working on ozone issues at the thirtieth meeting of the Open-ended Working Group in June 2010, he had become an integral and much-appreciated member of the Ozone family. In addition to being knowledgeable about all issues related to the Montreal Protocol, he was a skilled negotiator with a keen sense of humour. He had played a key role during the negotiation of the Kigali Amendment and had subsequently rallied support for the Amendment's ratification among European Union member States. The Secretariat greatly appreciated his contribution to the work of the Assessment Panels and the fundamental role that he had played in the development of the pilot project to address gaps in atmospheric monitoring. His accomplishments had been numerous and his contributions plentiful. His absence would be sorely felt by everyone in the Ozone family.

116. Many representatives took the floor to thank Mr. Owen for his contribution to the success of the Montreal Protocol and the Vienna Convention. They spoke of his constructive, pragmatic approach to negotiations, his constant efforts to seek consensus, his sense of humour, which had often proved helpful in defusing tension, his support to colleagues and his willingness to share his knowledge, and wished him all the best for his future endeavours, both professionally and personally.

117. Mr. Ganem was retiring at the end of 2021. In a statement, Ms. Seki referred to Mr. Ganem as an esteemed friend of the Montreal Protocol. She had first met him in the early 1990s when he had visited Nairobi with the first Chief Officer of the Multilateral Fund. The Fund was recognized as one of the most innovative, fair and successful financial mechanisms for the protection of the global environment and a cornerstone of the success of the Montreal Protocol. Mr. Ganem had given 30 years of incredible service to the Fund. He had worked on projects and activities for Article 5 parties that had led to the phase-out of CFCs, halons, carbon tetrachloride and methyl bromide and was engaged in efforts to phase out HCFCs and phase down HFCs. The policies and guidelines document on all the decisions taken by the Executive Committee of the Multilateral Fund had been his brainchild, as had the inventory of approved projects, containing technical and cost information on all the projects approved by the Fund. Those documents continued to be of great help to the Montreal Protocol community. Mr. Ganem's leadership had been characterized by hard work, integrity and an uncompromising commitment to fairness and excellence.

118. Many representatives took the floor to wish Mr. Ganem well in his retirement and to thank him both for his contribution to the success of the Montreal Protocol and for his support on a personal level over the years. They highlighted not only his immense technical knowledge, diligence and professionalism but also his innate honesty and sense of fairness.

Part two: high-level segment (29 October 2021)

I. Opening of the high-level segment

119. The high-level segment was opened by Mr. Ndiaye Cheikh Sylla (Senegal), President of the twelfth meeting of the Conference of the Parties to the Vienna Convention, at 2 p.m. on Friday, 29 October 2021.

120. Opening statements were made by Ms. Inger Andersen, Executive Director of UNEP; Mr. Sylla; and Mr. Ezzat Lewis (Egypt), Vice-President of the Thirty-Second Meeting of the Parties to the Montreal Protocol, on behalf of Mr. Paul Krajnik (Austria), President of the Thirty-Second Meeting of the Parties to the Montreal Protocol.

A. Statement by the Executive Secretary of the United Nations Environment Programme

121. In her opening statement, Ms. Andersen commended the parties for remaining committed to the Montreal Protocol during the COVID-19 pandemic, which had entailed conducting complex negotiations across different time zones. She wished all delegates success in reaching positive outcomes at the meeting, including some interim decisions on the Multilateral Fund for the Implementation of the Montreal Protocol, a vital funding tool and cornerstone of the Protocol. She congratulated the parties on the swift action taken to deal with the unexpected rise in CFC-11 emissions, first detected in 2018. The issue had demonstrated the need to strengthen science and atmospheric monitoring to ensure that future unexpected emissions could be detected and dealt with even more rapidly.

122. Turning to the matter of climate change, she noted that the upcoming twenty-sixth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change was coming at the end of a year that had seen floods, heatwaves, wildfires and other climate impacts intensify across the globe. However, nations were still not doing enough to limit climate change. The lag in climate action made the Montreal Protocol and its Kigali Amendment even more important. Parties' efforts under the Protocol had made a significant contribution to slowing climate change, owing to the reduction in emissions of climate-warming refrigerant gases and the biodiversity benefits of protecting the ozone layer. She congratulated the 127 parties that had ratified the Kigali Amendment to date, but urged full ratification, which could prevent up to 0.4°C of temperature increase, while work on energy-efficient technologies in the cooling industry could potentially double the climate benefits of the HFC phase-down provided for in the Amendment. Action under the Kigali Amendment could also boost food security and vaccine delivery through adoption of environmentally friendly cooling technologies, in line with the Rome Declaration on the Contribution of the Montreal Protocol to Food Loss Reduction through Sustainable Cold Chain Development. In conclusion, she said that if parties could build on the success of the Montreal Protocol and realize the full potential of the Kigali Amendment, that agreement would go down in history as one of the key processes that put humanity on track to a peaceful, prosperous and sustainable future.

B. Statement by the President of the twelfth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer

123. In his opening statement, Mr. Sylla welcomed participants and alluded to the extraordinary circumstances that had necessitated holding the twelfth meeting of the Conference of the Parties to the Vienna Convention in two parts. He expressed solidarity with those who had been affected by the COVID-19 pandemic, and he thanked parties for their resilience in carrying on with the work of the Convention in order to achieve its objectives and implement the decisions adopted. He outlined the matters to be considered at the current meeting, including the recommendations made by the Ozone Research Managers of the Parties to the Vienna Convention at their eleventh meeting and the status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, and he expressed hope that the parties would adopt decisions on those important matters. He thanked the Ozone Research Managers for developing a set of recommendations to further promote work under the Convention and increase linkages with the work of the Scientific Assessment Panel under the Montreal Protocol, particularly with regard to the identification of gaps in the global coverage of atmospheric monitoring of controlled substances and the provision of options for ways to enhance such monitoring, pursuant to decision XXXI/3.

124. In conclusion, he said that much remained to be done to tackle new environment-related issues that might not have been contemplated at the beginning of the implementation of the Convention and the Protocol. He was encouraged by the remarkable resilience that parties had demonstrated in combating the COVID-19 pandemic and remaining resolute in protecting the environment.

C. Statement by the Vice-President of the Thirty-Second Meeting of the Parties to the Montreal Protocol on behalf of the President

125. In his opening statement Mr. Lewis, speaking on behalf of Mr. Krajnik, welcomed participants to the meeting. He said that the agenda of the Meeting of the Parties to the Montreal Protocol included several items that had not been discussed in 2020 because of constraints imposed by the ongoing COVID-19 pandemic, including financial reports and budgets, replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol for the period 2021–2023, the unexpected emissions of CFC-11, identification of gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring, nominations for methyl bromide critical-use

exemptions for 2022 and 2023, changes in the membership of the Technology and Economic Assessment Panel, and energy-efficient and low-global-warming-potential technologies. Encouraging preliminary work had been undertaken earlier in the year, including the extraordinary meeting of the parties in May to decide on contributions to the Multilateral Fund for 2021, followed by the forty-third meeting of the Open-ended Working Group in May and July. In addition, prior to the opening of the preparatory segment of the current meeting, the Secretariat had organized a number of online briefings to clarify some issues on the agenda, including the progress report of the Technology and Economic Assessment Panel and the updated Multilateral Fund replenishment report.

126. Regarding the Kigali Amendment, he said that 15 October 2021 had marked the fifth anniversary of the adoption of the Amendment. He congratulated those parties that had thus far ratified the Amendment, while noting that, as in the case of the four previous amendments to the Montreal Protocol, universal ratification was required for the Amendment to have a meaningful impact on its objectives. The phase-down of HFCs, apart from its climate advantages, created the opportunity to increase the energy efficiency of cooling equipment and significantly reduce energy costs for consumers and businesses.

II. Organizational matters

A. Election of officers of the Thirty-Third Meeting of the Parties to the Montreal Protocol

127. In accordance with paragraph 1 of rule 21 of the rules of procedure, the following officers were elected, by acclamation, to the Bureau of the Thirty-Third Meeting of the Parties to the Montreal Protocol:

President:	Mr. Siméon Sawadogo (Burkina Faso) (African States)
Vice-Presidents:	Ms. Noorah Mohammed Algethami (Saudi Arabia) (Asia-Pacific States) Ms. Azra Rogović-Grubić (Bosnia and Herzegovina) (Eastern European States) Ms. Marissa Gowrie (Trinidad and Tobago) (Latin American and Caribbean States)
Rapporteur:	Ms. Mariska Wouters (New Zealand) (Western European and other States)

B. Adoption of the agenda of the high-level segment

128. The following agenda for the high-level segment was adopted on the basis of the provisional agenda contained in document UNEP/OzL.Conv.12(II)/1–UNEP/OzL.Pro.33/1:

1. Opening of the high-level segment:
 - (a) Statement by the President of the twelfth meeting of the Conference of the Parties to the Vienna Convention;
 - (b) Statement by the President of the Thirty-Second Meeting of the Parties to the Montreal Protocol;
 - (c) Statement by a representative of the United Nations Environment Programme.
2. Organizational matters:
 - (a) Election of officers of the Thirty-Third Meeting of the Parties to the Montreal Protocol;
 - (b) Adoption of the agenda of the high-level segment;
 - (c) Organization of work;
 - (d) Credentials of representatives.
3. Presentations by the assessment panels on the status of their work.
4. Report by the Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol on the work of the Executive Committee

5. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol.
6. Dates and venues for the thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Fourth Meeting of the Parties to the Montreal Protocol.
7. Other matters.
8. Adoption of decisions by the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II).
9. Adoption of decisions by the Thirty-Third Meeting of the Parties to the Montreal Protocol.
10. Adoption of the report of the twelfth meeting (part II) of the Conference of the Parties to the Vienna Convention and the Thirty-Third Meeting of the Parties to the Montreal Protocol.
11. Closure of the meeting.

C. Organization of work

129. The parties agreed to follow their customary procedures.

D. Credentials of representatives

130. The bureaux of the twelfth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Third Meeting of the Parties to the Montreal Protocol approved the credentials of the representatives of 68 of the 132 parties represented at the meeting. The bureaux provisionally approved the participation of 63 parties on the understanding that they would forward their credentials to the Secretariat as soon as possible. The bureaux urged all parties attending future meetings of the parties to make their best efforts to submit credentials to the Secretariat as required under rule 18 of the rules of procedure. The bureaux also recalled that the rules of procedure required that credentials be issued either by a Head of State or Government or by a minister for foreign affairs or, in the case of a regional economic integration organization, by the competent authority of that organization. The bureaux recalled that representatives of parties not presenting credentials in the correct form could be precluded from participating fully in the meetings of the parties, including with regard to the right to vote.

III. Presentations by the assessment panels on the status of their work

131. Mr. John Pyle, co-chair of the Scientific Assessment Panel, speaking also on behalf of the other co-chairs of the Panel, Mr. David Fahey, Mr. Paul Newman and Mr. Bonfils Safari, gave a presentation on the Panel's scientific assessment of ozone depletion for 2022, which was being prepared in response to decision XXXI/2, the summary report on increased CFC-11 emissions that had been prepared in response to decision XXX/3 and presented at the forty-third meeting of the Open-ended Working Group, and the 2021 Antarctic ozone hole. A summary of the presentation is set out in the annex to the present report.

132. Ms. Janet Bornman, co-chair of the Environmental Effects Assessment Panel, speaking also on behalf of the other co-chairs of the Panel, Mr. Paul Barnes and Mr. Krishna Pandey, gave a presentation on the Panel's 2021 update on the environmental effects of the interaction between stratospheric ozone depletion, ultraviolet radiation and climate change. A summary of the presentation is set out in the annex to the present report.

133. Mr. Ashley Woodcock, co-chair of the Technology and Economic Assessment Panel, speaking also on behalf of the other co-chairs of the Panel, Ms. Bella Maranion and Ms. Marta Pizano, gave a presentation on the work of the Panel and its technical options committees and task forces. A summary of the presentation is set out in the annex to the present report.

134. The President, on behalf of all the parties, thanked the assessment panels for their presentations, for the key role that they played in the implementation of the Montreal Protocol and for the excellent reports that they produced annually and quadrennially to enable the parties to make informed decisions.

135. The parties took note of the information presented.

IV. Report by the Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol on the work of the Executive Committee

136. The Chair of the Executive Committee of the Multilateral Fund, Mr. Alain Wilmart (Belgium), reported on the progress achieved by the Committee since the Thirty-Second Meeting of the Parties, as detailed in document UNEP/OzL.Pro.33/7. He explained that, owing to the COVID-19 pandemic, the Committee had held its eighty-fifth, eighty-sixth and eighty-seventh meetings online. The full reports of the meetings were set out in documents UNEP/OzL.Pro/ExCom/85/67, UNEP/OzL.Pro/ExCom/86/100 and UNEP/OzL.Pro/ExCom/87/58, respectively.

137. Since the Thirty-Second Meeting of the Parties, the Executive Committee had continued to manage the work of the partners of the Multilateral Fund. He gave a brief overview of the ongoing work of the implementing agencies – UNDP, UNEP, UNIDO and the World Bank – in supporting Article 5 countries in meeting their obligations under the Montreal Protocol and the Kigali Amendment thereto.

138. UNDP was providing technical support to 47 countries in meeting their HCFC phase-out targets under the Montreal Protocol and to 19 countries for ratification and early implementation of the Kigali Amendment; 13 of those countries had completed the process of ratification. Furthermore, four HFC investment projects had been completed according to the schedule. During the pandemic, UNDP had organized more than 30 webinars on technical topics to enable Article 5 parties to exchange information and had provided training remotely to national ozone units and other stakeholders.

139. UNEP, through its OzonAction Compliance Assistance Programme, was supporting 104 countries in operating national ozone units, complying with their HCFC phase-out commitments and working towards the ratification of the Kigali Amendment. UNEP also continued to support the safe adoption of new technologies in the refrigeration and air-conditioning servicing sector. During the pandemic, UNEP had increased communication with the national ozone units and was assisting them in the identification of alternative work modalities, including online platforms and innovative tools provided through the clearing-house mechanism.

140. UNIDO was implementing HCFC phase-out management plans in 72 countries and institutional strengthening projects in 11 countries. It had almost completed HFC enabling activities in 31 countries, the majority of which had ratified the Kigali Amendment. In 2021, it had secured approval for two projects to destroy HFC-23 by-product emissions. Moreover, it had received approval for funding for the preparation of HFC phase-down plans for 12 countries. During the pandemic, it had held online consultations, training sessions and webinars for national ozone officers.

141. The World Bank had been supporting countries in implementing stage II of their HCFC phase out management plans, not only to achieve reductions in HCFC consumption and production in line with their obligations but also in preparation for the 2025 targets. The Bank was also providing technical assistance and advisory services for the ratification of, and initial compliance with, the Kigali Amendment. During the pandemic, the World Bank and country project management staff had been working to mitigate the challenges posed by running missions, meetings and workshops remotely.

142. In closing, he expressed his appreciation to the members of the Executive Committee, the Fund secretariat and the bilateral and implementing agencies for their continued hard work and dedication and their unwavering commitment to the implementation of the Montreal Protocol, especially in such difficult times.

V. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II) and the Thirty-Third Meeting of the Parties to the Montreal Protocol

143. The co-chair of the preparatory segment reported that the work of the segment had been concluded successfully. One matter had been deferred to the next in-person meeting, owing to its complex nature, namely the proposed draft decision, submitted by Ghana on behalf of the African States parties to the Montreal Protocol, on stopping environmentally harmful dumping of inefficient refrigeration and air conditioning appliances using obsolete refrigerants, a matter that had been considered under agenda item 4 (g) on energy-efficient and low-global-warming-potential

technologies. All other draft decisions had been approved for consideration and possible adoption during the high-level segment. She expressed gratitude to all concerned for their hard work and for the spirit of cooperation and compromise that had enabled them to reach agreement on the issues.

VI. Dates and venues of the thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Fourth Meeting of the Parties to the Montreal Protocol

144. The Executive Secretary said that the Thirty-Fourth Meeting of the Parties to the Montreal Protocol was tentatively scheduled to be held in Nairobi from 31 October to 4 November 2022, while the thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol were tentatively scheduled to be held in Nairobi from 28 October to 1 November 2024.

145. Subsequently, the parties adopted two decisions on the matter.

VII. Other matters

146. No other matters were considered during the high-level segment.

VIII. Adoption of decisions by the Conference of the Parties to the Vienna Convention at its twelfth meeting (part II)

147. The Conference of the Parties to the Vienna Convention adopted the decisions approved during the preparatory segment, as set out in document UNEP/OzL.Conv.12(II)/9/Add.1–UNEP/OzL.Pro.33/8/Add.1.

IX. Adoption of decisions by the Thirty-Third Meeting of the Parties to the Montreal Protocol

148. The Thirty-Third Meeting of the Parties to the Montreal Protocol adopted the decisions approved during the preparatory segment, as set out in document UNEP/OzL.Conv.12(II)/9/Add.1–UNEP/OzL.Pro.33/8/Add.1.

149. During the adoption of decision XXXIII/7, on data and information provided by the parties in accordance with Article 7 of the Montreal Protocol, the representative of the Russian Federation said that his Government had reported to the Secretariat data on HFCs for baseline years 2011–2013 and was therefore in compliance with the data reporting requirement under paragraph 2 of Article 7. He added that the matter seemed not to have been on the agenda of the sixty-seventh meeting of the Implementation Committee and had thus not been properly considered; that the Implementation Committee was the body mandated to pronounce on whether a party was in non-compliance; and that, his Government having submitted the required data, it was inappropriate to include his country in the decision being adopted.

150. The Senior Legal Officer of the Ozone Secretariat said that each year the Implementation Committee considered an agenda item on data reporting, under which the Secretariat reported the data submitted by each party and highlighted which parties had not reported their information or met the reporting requirements by 30 September of that year. The matter in question had been considered by the Implementation Committee under that standard agenda item. With respect to pronouncement of non-compliance, the Meeting of the Parties was the body that made such pronouncements; the role of the Implementation Committee was to consider the matter and forward a recommendation to the Meeting of the Parties, which it had done in the case in question.

151. The representative of the Russian Federation requested that his statement be reflected in the report of the meeting.

X. Adoption of the report of the combined meeting

152. The parties adopted the present report on Friday, 29 October 2021, on the basis of the draft report set out in documents UNEP/OzL.Conv.12(II)/L.1–UNEP/OzL.Pro.33/L.1 and UNEP/OzL.Conv.12(II)/L.1/Add.1–UNEP/OzL.Pro.33/L.1Add.1. The Ozone Secretariat was entrusted with the finalization of the report.

XI. Closure of the meeting

153. Following the customary exchange of courtesies, the meeting was declared closed at 5.50 p.m. on Friday, 29 October 2021.

ADVANCE

Annex

Summaries of presentations by members of the assessment panels and technical options committees*

A. Final assessment by the Methyl Bromide Technical Options Committee of critical-use nomination exemptions for methyl bromide

1. On behalf of TEAP, the Methyl Bromide Technical Options Committee co-chairs, Marta Pizano and Ian Porter presented an overview of the trends and outcomes for the CUN nominations submitted in 2021 for use in 2022 and 2023.
2. In opening the presentation, Co-chair Ms Marta Pizano reinforced the diversity of technical skills of the MBTOC committee ranging from experts who had skills not only in all aspects of chemical and non-chemical replacements to MB but also pathogen and insect control and knowledge of trade implications and bilateral arrangements for QPS use of methyl bromide. Access to the detailed CUN final report was on the meeting portal website.
3. She explained that four CUN nominations had been submitted received this year for preplant soil use of methyl bromide, two from non A5 parties, Canada and Australia and two from an A5 party, Argentina. No submissions were received for Commodity and structural uses.
4. An overview of the stock amounts reported by three parties at the end of 2020 showed that no stocks were held by those parties. She reminded parties that MBTOC does not adjust CUE recommendations to account for stocks, if these are reported.
5. Ms Pizano then provided an overview of the CUNs submitted in 2021 compared to those with 2020 and explained that all parties had reduced nominations from 80.55 tonnes to 29.107 tonnes, however the reduction needed to take account that the Republic of South Africa had not sought any nominations in this round.
6. Ms Pizano then commenced an overview of the outcome of the final assessment for CUE recommendations for all critical uses of MB (t) for 2022 and 2023.
7. For the Australian strawberry runners the Party nominated 14.49 tonnes, a 50% reduction on the previous year, stating that they will reduce the licensed amount to 0 tonnes if methyl iodide (MI) is registered and available by 2023. MBTOC accepted that MI was the only alternative for soil treatment to produce all generations of runners and that the party would reduce MB use entirely as per their transition plan.
8. Mr. Porter then explained that for Canadian strawberry runners in 2022 the nomination had been reduced by 5% to that in the previous round to 5.017 tonnes to account for uptake of soilless production systems. This was based on MBTOC's recommendation that soilless production techniques could offset a proportion of MB use for production of G2A-stage tips.
9. MBTOC recommended the full amount of 3.70 tonnes for strawberry fruit and 5.90 tonnes for tomato applied for in the nominations from Argentina. MBTOC made this recommendation on the basis that the party had reduced its nominations by 15% over the previous year and was progressing well to phase out MB for these uses.
10. He then indicated that no submission was received from RSA due to COVID issues affecting current house sales and the need for MB fumigation in the current year, so the remaining stocks will be used in 2022.
11. Mr Porter then highlighted that since 1999, reductions in MB controlled uses (including reductions in the 18,600 tonnes to very small amounts (ie 30 t) sought for critical uses in the current round) has led to >30% reduction in the concentration of MB in the atmosphere and this is a key driver for present ozone layer recovery owing to the short shelf life of MB in the atmosphere.
12. He stressed however that further reductions in atmospheric levels of MB now rely on reduction of MB emissions from QPS uses, by adopting alternatives and use of recapture and destruction or recapture and reuse of MB, and by preventing non-compliant uses.

* The summaries are presented as received, without formal editing.

13. The timelines for submission and evaluation of CUNs in 2020 were shown, as required under Decision Dec XVI/6 1, bii.

B. Assessment by the Scientific Assessment Panel of ozone depletion for 2022

14. The Scientific Assessment Panel (SAP) outlined the current status of their work. A major part of the current work is involved in preparation of the 2022 Scientific Assessment of Ozone Depletion. The chapter teams have all prepared detailed first drafts, which were sent out for review, on time, by early October. Responses from the referees are requested by mid-November, after which second drafts will be prepared. Important future milestones include a review meeting in March 2021 and final preparation of the Assessment, including of the Executive Summary, in July. The Assessment is satisfyingly on track.

15. The SAP have previously discussed the Report on Unexpected Emissions of CFC-11 (<https://ozone.unep.org/science/assessment/sap>) at OEWG 43. An update was presented based on a SAP presentation to the Quadrennial Ozone Symposium in October 2021. Analyses of data that have become available recently show that the global atmospheric concentration of CFC-11 continued to drop rapidly through 2020 and the first part of 2021. Global CFC-11 emissions, derived from the atmospheric measurements are even lower than those in 2019, are substantially below 2008-2012 values and are approaching expected levels, suggesting that much of the new use and unreported production has stopped. There remain important questions concerning the magnitudes of the present-day CFC-11 bank associated with pre-2010 production and the recent unreported emissions.

16. Finally, the Antarctic ozone hole of 2021 was discussed. The area of the hole was higher than in some recent years, but not as high as during the period of peak ODS (halogen) loading of the stratosphere in the 1995-2010 period. Temperatures within the Antarctic polar vortex have been lower than average in 2021, conducive to larger ozone depletion. This depletion is consistent with our understanding of the relative roles of meteorological processes and halogen loading in controlling ozone depletion, as has been discussed by SAP previously. The previous 2020 Antarctic hole was of longer duration than normal; there are indications that the same may apply in 2021.

C. 2021 update by the Environmental Effects Assessment Panel on the environmental effects of the interaction between stratospheric ozone depletion, ultraviolet radiation and climate change

17. On behalf of EEAP, the Co-chair, Janet Bornman, presented the 2021 Update Assessment on the environmental effects of stratospheric ozone depletion, UV radiation, and interactions with climate change in accordance with the current Terms of Reference.

18. The annual EEAP Updates contribute towards the Quadrennial Assessments, providing the latest scientific information of relevance to the Parties. Janet Bornman also referred to the Panel's ongoing collaboration with WHO and WMO, as well as with TEAP and SAP. The EEAP workplan for the 2022 Quadrennial Assessment was outlined, together with the intended format that will include Summary of highlights, Executive summary, main text, and Frequently Asked Questions (FAQs).

19. Highlights of the 2021 Update Assessment included the interactive effects of UV radiation, climate change, and stratospheric ozone depletion in regard to the record duration of the 2020 Antarctic ozone hole and record high UV index. However, the trend of continuing decline in stratospheric ozone depletion during September is still evident. Over the Arctic, the increased depletion of the stratospheric ozone contributed to high spring temperatures in Asia and Europe. It was noted that human-caused (anthropogenic) climate change has the potential to partially counteract the positive effects of the Montreal Protocol on the Arctic ozone layer, according to the recent Intergovernmental Panel on Climate Change, the IPCC (2021).

20. The changes in UV radiation, climate change and stratospheric ozone have a range of adverse consequences for the environment and human health. The severity of these effects has been lessened due to the Montreal Protocol, allowing also for the beneficial effects of exposure to UV radiation – such as for certain immune diseases, including COVID-19. Incidences of skin cancer and eye diseases continue to be of concern.

21. The 2021 Update also reported on extreme climate events (ECEs), the severity and frequency of which have been associated with increased global warming from greenhouse gases. ECEs, such as wildfires and catastrophic drought, expose the terrestrial and aquatic environments to additional UV radiation. Consequences of the increased global warming overlain by the ECEs has widespread negative effects for terrestrial and aquatic ecosystems and their biodiversity. An example of a feedback process from ECEs includes increased input of terrestrial runoff (dissolved organic matter, DOM) into

water bodies, where UV radiation breaks down the DOM at the surface, leading to the release of greenhouse gases from this DOM, adding to the burden of global warming. However, scientists have warned of the expected large environmental effects from any potential geoengineering of the Earth's climate to decrease warming.

22. UV radiation also plays a role in the breakdown (degradation) of controlled substances and their alternatives. For example, trifluoroacetic acid (TFA), which is a widespread contaminant from the breakdown of HFCs, HCFCs, and HFOs, as well as having natural sources. Recently TFA was detected in surface waters, beer, tea, herbal infusions and indoor dust, but in concentrations well below those that would pose a human health risk.

23. The Montreal Protocol has stimulated innovation in a number of sectors. For instance, in the science of protecting natural and synthetic materials (e.g., wood, plastics, textiles), where their outdoor lifetimes are reduced by exposure to UV radiation and weathering. The insertion of stabilisers into materials, including compounds with absorptive or reflective properties, lessens the impact of UV radiation, although this means higher cost of these materials and release of additives into the environment. However, without the Montreal Protocol more degradation by UV radiation would have occurred, resulting in increased use of stabilisers, and concomitant higher cost of materials and greater release of additives into the environment. The breakdown of plastics and other materials by UV radiation, leading to the release of contaminants, carries potential health and environmental risks.

24. Lastly, reference was made to a modelling study further emphasising the significance of the Montreal Protocol in protecting plants as important carbon sinks, although the estimations understandably embody high uncertainties.

25. Co-Chair Janet Bornman concluded by noting the multiple benefits of the Montreal Protocol by referring to the latter's ongoing contribution to many of the Sustainable Development Goals.

D. Presentation on the work of the Technology and Economic Assessment Panel and its technical options committees and task forces

26. Professor Ashley Woodcock made the presentation on behalf of his co-chairs Bella Maranion and Marta Pizano, and the Technology and Economic Assessment Panel (TEAP) whom he thanked for their dedication and hard work.

27. Before making the presentation, he placed on record the gratitude for the heroic efforts of the Ozone Secretariat to ensure continuity of our TEAP work. He also offered thanks and congratulations to the retiring Chief Officer of the MLF Secretariat, Eduardo Ganem, whose generous support and wise guidance, have been invaluable to the TEAP for many years.

28. TEAP has 20 members, supported by 5 Technical Options Committees, with over 150 experts from around the world. During 2021, TEAP has provided its annual Progress Report, the Technical Note on the Vaccines Cold Chain, completed its preliminary and final evaluation on Critical Use Nominations for Methyl Bromide, and delivered and presented three Task Force reports

29. He outlined some of the challenges facing the TEAP in the last year. The COVID pandemic has required Montreal Protocol processes to adapt to on-line meetings. Since TEAP last met in MOP-31 in Rome in 2019, it has maintained consensus and engagement to deliver 14 reports. TEAP and TOC members are world-leading technical experts in their field. It constantly strives to maintain that level of independent technical and economic expertise for the service of parties. TEAP is also aware of the need to ensure that its membership meets the evolving needs of parties whilst ensuring continuity of its work under the Montreal Protocol. When TEAP meets face to face next year, it is planning discussions on its structure, membership and future directions to present in its 2022 Progress Report.

30. Professor Woodcock then moved to describe the sector highlights and emerging issues from the five technical options committees.

31. **FTOC (Foams)** described the continued progress in the adoption of zero- and low-GWP foam blowing agents. Ongoing issues for small and medium enterprises include the cost of HFCs and HFOs/HFCOs, and the safe use of flammable blowing agents. In addition there have been supply chain issues including insufficient capacity for low GWP options, access to raw materials, weather-related disruptions to chemical plants for both low-GWP blowing agents and polyols, and shipping disruptions

32. **HTOC (Halons)** state that although R&D continues, the certification timescales for civil aircraft are long, and it will still be at least several years before any of the fire extinguishing agents currently being evaluated could be in service. There is increasing contamination of recovered halon

1301. To recycle halons to an acceptable level of purity requires distillation, which can introduce further losses. Recycling companies are reporting problems shipping halons across international borders including misclassifying recovered halons as hazardous waste under the Basel Convention. Ship breaking could represent a significant source of halon 1301, but the amount potentially available is still under investigation by the HTOC. Importantly, HTOC believes there is a need for awareness programs to reverse the loss of institutional knowledge on requirements for halon management.
33. There has been an unprecedented and precipitate fall in air passengers with the global pandemic, but no decline as yet in atmospheric halon 1301 levels. The decline in atmospheric halon 1301 levels appears to have flattened for the last 5 years, relative to the projected decline in halon 1301 emissions from the HTOC Bank Model.
34. **MBTOC (Methyl Bromide)** reports that there is good progress with critical use nominations (CUNs) now down to less than 70 tonnes/year. However, Article 7 data suggests some parties may not be distinguishing controlled versus uncontrolled use appropriately. MB stocks now dwarf CUNs, and whilst parties *with* CUNs are mandated to report stocks (about 20 tonnes), parties *without* CUNs do not report stocks (which may be up to 1500 tonnes, and could be used for controlled uses). Parties may wish to consider the reporting rules on stocks.
35. Parties may wish to start to consider Quarantine versus Pre-shipment uses of MB separately. The use of MB for overall QPS use is estimated at 10,000 tonnes (about 150 times more than the CUNs). For pre-shipment, alternatives exist for most uses, because of the lower standard of pest control required. For uses where MB is still essential (eg quarantine), recapture and recycle technologies are now available
36. The **MCTOC (Medical and Chemical)** reports that atmospheric-derived emissions for a range of controlled substances, including e.g., CFC-113/113a, HCFC-132b, -133a, -31, are higher than expected based on reported production. They stated that a clearer understanding of the production of feedstock, intermediates, and by-products, would allow a meaningful analysis of global and regional emissions.
37. Global HFC-23 emissions were at their highest in 2018 compared with emissions expected as the by-product of HCFC-22 production. Either planned HFC-23 emissions reductions have not have been fully realized, or alternatively there may be unreported HCFC-22 production.
38. An assessment of technologies used for the destruction of controlled substances under decision XXX/6 will be included in MCTOC's 2022 Assessment Report. MCTOC will also provide an update on issues surrounding the destruction of banks of controlled substances
39. The **RTOC (Refrigeration Air Conditioning and Heat Pumps)** reported that since the RTOC 2018 Assessment Report, 1 single-component refrigerant and 14 blends have achieved classifications. They also reported that international institutions are working to review the refrigerant charge in different applications, with appropriate safety standards, to allow the use of low GWP flammable refrigerants. The standard for commercial refrigeration was revised upwards for larger charges of flammable refrigerants and is currently being transferred to national standards. Work on the standard for air conditioning and heat pumps is on-going, aimed at increasing the charge per unit room floor area for all flammable refrigerants
40. Training in the servicing and maintenance of RACHP equipment to reduce leaks will reduce emissions of high GWP HFCs. Parties attention was drawn to the Vaccine Cold Chain Technical Note on the Ozone secretariat website.
41. Professor Woodcock the moved to summarise the key findings for the three task force reports.
42. The **TEAP Replenishment Task Force** presented its updated estimated funding requirement for the 2021-2023 triennium, narrowing the range to approximately US\$ 418-780 million from its report last year. This reflects progress on ratifications of the Kigali Amendment: 84 of 144 A5 parties have now ratified, especially the largest consuming party in Group 1. It also reflects progress at the Executive Committee on project approvals and agreements, a business plan now covering the full triennium, and new HFC project preparation cost guidelines. As requested in the decision and for the consideration of parties, RTF estimates also included support for the special needs of low- and very low-volume consuming countries, enabling activities, stand-alone projects, and cost of early activities to avoid the growth of high-GWP HFCs. TEAP sincerely appreciates the work of this two-year Task Force to support parties reaching a decision next year that supports continued, important progress of A5 parties on ODS phaseout and HFC phasedown.

43. The **TEAP Task force on Unexpected Emissions of CFC-11** found that unreported CFC-11 production and use is indicated from the comparison of inventory-estimated expected CFC-11 emissions with emissions derived from atmospheric measurements. Based on the analysis, emissions from the pre-2010 CFC-11 bank alone could not explain the derived CFC-11 emissions during 2013-2018. Also, unreported CFC-11 production and use would seem to have started in 2007. There was likely a combination of technical and economic reasons for illegal CFC-11 production and the resumption of its use in closed-cell foams.

44. The CFC-11 Task Force analysis indicated that the Cumulative unreported CFC-11 production is in the range of 320 to 700 thousand tonnes for the years 2007 to 2019. Assuming that CFC-11 was used in closed-cell foams, this amount of CFC-11 production leads to an increase in the CFC-11 bank of ~300 thousand tonnes. The opportunities to recover CFC-11 are limited to global active banks, mainly insulation foams and to a lesser extent centrifugal chillers. Management of active foam banks at the end-of-life could divert substantial amounts of CFC-11 containing foam wastes away from landfill towards destruction, mitigating emissions.

45. MCTOC stated that parties may wish to consider how to generate global data on production by market sector, which is critical to the Montreal Protocol's ability to answer future questions about emissions discrepancies, as a global check on compliance.

46. The **TEAP Task Force for the continued provision of information on Energy efficient and Low-GWP technologies (EETF)** observed that the demand for cooling is increasing rapidly, which is leading to increasing global warming from both direct and indirect emissions. The Montreal Protocol has already recognised the need to improve the energy efficiency of RACHP equipment during the phase-out of ODS and now the phase-down of high-GWP refrigerants. The EETF observed that there are many opportunities available to improve Energy efficiency while implementing the Protocol's control measures. These include facilitating the collaboration between Ozone Units and energy departments, encouraging integrated regulations for energy efficiency during HCFC phase-out and HFC phasedown, Improving access to lower GWP/high EE RACHP technologies and preventing the dumping of high GWP/low EE RACHP equipment in A5 parties, together with considering how to assist parties who wish to adopt a "fast mover" status with synergistic HCFC phase-out/HFC phase-down with progressive improvement in energy efficiency

47. Professor Woodcock introduced the Terms of Reference for the 2022 TEAP Assessment Report, described in Paragraph 6 of Decision 31/2 which states:

"That, in its 2022 report, the [TEAP] should include an assessment and evaluation of the following topics:

- (a) Technical progress in the production and consumption sectors in the transition to technically and economically feasible and sustainable alternatives and practices that minimize or eliminate the use of controlled substances in all sectors;
- (b) The status of banks and stocks of controlled substances and the options available for managing them so as to avoid emissions to the atmosphere;
- (c) Challenges facing all parties to the Montreal Protocol in implementing Montreal Protocol obligations and maintaining the phase-outs already achieved, especially those on substitutes and substitution technologies, including challenges for parties related to feedstock uses and by-production to prevent emissions, and potential technically and economically feasible options to face those challenges;
- (d) The impact of the phase-out of controlled ozone-depleting substances and the phase-down of HFCs on sustainable development;
- (e) Technical advancements in developing alternatives to HFCs suitable for usage in countries with high ambient temperatures, particularly with regard to energy efficiency and safety."

48. He ended by stating that TEAP and its TOCS have made progress with advanced planning and organisation, and that the TOCs have begun their work. TEAP is considering the gap between atmospheric-derived emissions and calculated emissions based on Article 7 data to understand the potential challenges facing parties and potential options that might address those challenges. TEAP is anticipating emerging issues for consideration in its Assessment. Finally, TEAP is coordinating with SAP and EEAP on crossover issues for the Assessments, which will then form the basis for the Synthesis Report.