UNITED
NATIONS

EP

UNEP/OzL.Pro.27/13

Distr.: General
30 November 2015

Original: English

United Nations
Environment
Programme

Twenty-Seventh Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer
Dubai, United Arab Emirates, 1–5 November 2015

Report of the Twenty-Seventh Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer

Introduction

1. The Twenty-Seventh Meeting of the Parties to the Montreal Protocol was held at the Conrad Hotel in Dubai, United Arab Emirates, from 1 to 5 November 2015.

Part one: preparatory segment (1–3 November 2015)

I. Opening of the preparatory segment

2. The preparatory segment was opened by its co-chairs, Mr. Paul Krajnik (Austria) and Ms. Emma Rachmawaty (Indonesia), on Sunday, 1 November 2015 at 10 a.m.

3. Opening remarks were delivered by Mr. Rashed Ahmed bin Fahad, Minister of the Ministry of Environment and Water of the United Arab Emirates, and Ms. Tina Birmpili, Executive Secretary of the Ozone Secretariat, who formally opened the meeting.

A. Statement by the representative of the Government of the United Arab Emirates

4. In his remarks, Mr. Bin Fahad welcomed the parties to Dubai and expressed appreciation to the Ozone Secretariat and all others involved in organizing the current meeting. His Government, he said, remained committed to working with the international community to tackle all threats to human health and the environment, as reflected in its continuing efforts to meet its obligations under the Vienna Convention and the Montreal Protocol since acceding to the instruments in 1989 and 1990, respectively. Efforts in that regard had included legislative and institutional support for phasing out hydrochlorofluorocarbons (HCFCs) and combating illegal trade, as well as awareness-raising at the national and regional levels on such critical issues as refrigerant use in high ambient temperatures, and he called on the parties to work together with the same spirit of responsibility and compromise that they had shown to date in seeking sustainable solutions for the management of hydrofluorocarbons (HFCs), taking into account the viewpoints of all parties and the need to address the equally important issue of climate change.

5. Expressing his Government's satisfaction at its role in facilitating the success of the Open-ended Working Group in agreeing to establish a contact group to discuss HFC management and the proposed amendments to the Protocol, as well as its appreciation to all the parties for their flexibility, he wished them further success in their deliberations both at the current meeting and at the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris.

B. Statement by the representative of the United Nations Environment Programme

6. In her opening remarks, Ms. Birmpili said that the successful efforts undertaken under the Vienna Convention and the Montreal Protocol to rid the world of ozone depleting substances had become a legend that could inspire future successes, especially given that those efforts had not only helped to protect the Earth's ozone layer but had also contributed greatly to mitigating the threat of climate change.

7. The story of the Vienna Convention and the Montreal Protocol could be traced back to 1974, when researchers Mario Molina and Sherwood Rowland had published groundbreaking research indicating that chlorofluorocarbons (CFCs) were destroying the ozone layer. Under the leadership of the United Nations Enviroment Programme (UNEP) and its then Executive Director, Egyptian scientist Mustafa Tolba, a treaty aimed at protecting the stratospheric ozone layer had been negotiated, resulting in the adoption of the Vienna Convention in 1985 and, two years later, its Montreal Protocol.

8. On the thirtieth anniversary of the Convention, its 197 parties had much cause to celebrate. While the Montreal Protocol had started modestly, with control measures to phase out 50 per cent of a group of five CFCs and freeze production and consumption of three halons, over the years it had been amended and adjusted to cover the phase-out of nearly 100 such substances, including methyl bromide and HCFCs, and to accelerate the previously agreed phase-out schedule for HCFCs.

9. The parties had learned by doing and, as their confidence had increased, so had their level of ambition. The evolution of controls on CFCs, halons, HCFCs and methyl bromide had followed a flexible pattern that had drawn a distinction between parties operating under paragraph 1 of Article 5 (Article 5 parties) and parties not so operating, with early action by the latter and deferred action by the former, and the adoption of control measures and schedules appropriate to each group of parties. Just as important, additional obligations for Article 5 parties had been accompanied by additional funding for those parties.

10. Behind the success of the Montreal Protocol were its dedicated financial mechanism, which since its establishment in 1990 had provided more than $3.5 billion dollars to cover the incremental costs of implementing the Protocol in Article 5 parties; the work of its assessment panels, whose reports had assisted the parties in making informed decisions based on sound scientific, technological and economic data; and the willingness to find common ground that the parties had repeatedly demonstrated over the years.

11. The Montreal Protocol's success in phasing out ozone-depleting substances had inspired around 40 parties, including, India, a broad coalition of island developing States, the European Union and its 28 member States and three North American States, to submit four proposed amendments to the Protocol to deal with HFCs. At its resumed thirty-sixth meeting, held in Dubai the previous week, the Open-ended Working Group had begun to write the next phase of the Protocol by agreeing to the mandate for a contact group to address the issue of HFCs in two stages, first through consideration of the challenges facing all parties, in particular developing country parties, in managing HFCs, and then through discussion of four proposals to amend the Protocol to cover HFCs.

12. To move forward on HFCs, it was up to the parties at the current meeting to set up the proposed contact group and address the special situation of Article 5 parties, including through flexibility and additional time for implementation, exemptions, periodic review of alternatives and the provision of financial resources under the Protocol's financial mechanism. The thirtieth anniversary of the Vienna Convention offered parties the opportunity not only to celebrate the past successes of the ozone regime but also to build new milestones and use the institutions, mechanisms, knowledge and experience that they had built over the years to ensure the continued relevance of the Montreal Protocol and its ability to respond to evolving needs and emerging issues for the good of humankind and the environment.

II. Organizational matters

A. Attendance

13. The Twenty-Seventh Meeting of the Parties to the Montreal Protocol was attended by representatives of the following parties: Albania, Angola, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Belarus, Benin, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada, Chad, Chile, China, Colombia, Comoros, Cook Islands, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Dominican Republic, Egypt, El Salvador, Estonia, Ethiopia,

European Union, Fiji, Finland, France, Gabon, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea-Bissau, Guyana, Haiti, Holy See, Honduras, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Madagascar, Malawi, Malaysia, Maldives, Mali, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Montenegro, Mozambique, Nepal, Netherlands, New Zealand, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Paraguay, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Rwanda, Samoa, Saudi Arabia, Senegal, Singapore, Slovakia, Somalia, South Africa, Spain, Sri Lanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Thailand, the former Yugoslav Republic of Macedonia, Timor-Leste, Turkey, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Uzbekistan, Venezuela (Bolivarian Republic of), Viet Nam and Zimbabwe.

14. Representatives of the following United Nations bodies and specialized agencies also attended: secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol, secretariat of the United Nations Framework Convention on Climate Change, United Nations Development Programme, United Nations Environment Programme, United Nations Industrial Development Organization, World Bank and World Meteorological Organization.

15. The following intergovernmental, non-governmental, industry, academic and other bodies and individuals were also represented or present: Air-conditioning, Heating and Refrigeration Institute, Air-Conditioning and Refrigeration European Association, Alliance for Responsible Atmospheric Policy, Association of Heating, Refrigerating and Air-Conditioning Engineers, Center for Climate and Energy Solutions, Centre for Science and Environment, Chemours, China Association of Fluorine and Silicone Industry, China Household Electrical Appliances Association, China Refrigeration and Air-Conditioning Industry Association, Cooperation Council for the Arab States of the Gulf, Council on Energy, Environment and Water, CPI Industry, Daikin Industries, D.C. Pro Engineering L.L.C., Emirates Diplomatic Academy, Environmental Investigation Agency, European Partnership for Energy and the Environment, Ghantoot Transport & General Contracting Establishment, GIZ Proklima, Gluckman Consulting, Grassroots Government Advocacy Committee, Guangdong Meizhi Compressor Company and Welling Motor, Gujarat Fluorochemicals Limited, Honeywell, ICF International, INCON CRM FZE, Industrial Technology Research Institute, Ingersoll Rand, Institute for Governance and Sustainable Development, Institute of Nuclear and Energy Research (Instituto de Pesquisas Energeticas e Nucleares), Intech Pharma Pvt Ltd., International Institute of Refrigeration, International Pharmaceutical Aerosol Consortium, Japan Fluorocarbon Manufacturers Association, Japan Refrigerants and Environment Conservation Organization, Japan Refrigeration and Air-Conditioning Industry Association, Johnson Controls, JSC Kompozit, L. Kamal & Company, Kuwait University, Lawrence Berkeley National Laboratory, Mrs. Meenakashi Lekhi, Member of Parliament of India, Linde Group, Linde Gases Division, L. Kamal & Company, Mr. Jonathon Ong, Mr. Rajiv Pillai, Marketways, Mebrom Puurs, Mhmeng Consulting, MOPIA, Natural Resources Defense Council, National Aeronautics and Space Administration, Olama Consultancy, OSSC HaloPolymer, Petra Engineering, Refrigeration and Air-Conditioning Manufacturers Assocation, Refrigerant Gas Manufacturers Association, Refrigerant Reclaim Australia, Refrigerants Australia, RTOC Consulting Company, Shecco, Squire Patton Boggs, SRF Limited, Terre Policy Centre, The Three Factors Company, Transfrig, Transmond Environment Ltd., United Technologies Climate, Controls & Security, World Avoided Project, Ying Peng Group, Zhejiang Dongyang Chemical Co. Ltd., Zhejiang Foopeng Chemical Co. Ltd., Zhejiang Yonghe Refrigerant Co. Ltd. and 3M Electronics.

B. Officers

16. The preparatory segment was co-chaired by Mr. Krajnik and Ms. Rachmawaty.

C. Adoption of the agenda of the preparatory segment

17. The following agenda for the preparatory segment was adopted on the basis of the provisional agenda contained in document UNEP/OzL.Pro.27/1:

1. Opening of the preparatory segment:
    (a) Statement by the representative of the Government of United Arab Emirates;
    (b) Statements by the representative of the United Nations Environment Programme.
2. Organizational matters:
    (a) Adoption of the agenda of the preparatory segment;

(b) Organization of work.

3. Administrative matters:

(a) Consideration of membership of Montreal Protocol bodies for 2016;

(b) Financial report of the trust fund and budgets for the Montreal Protocol.

4. Issues related to exemptions from Articles 2A–2I of the Montreal Protocol:

(a) Nominations for essential-use exemptions for 2016;

(b) Nominations for critical-use exemptions for 2016 and 2017.

5. Issues related to alternatives to ozone-depleting substances:

(a) Report by the Technology and Economic Assessment Panel on the full range of alternatives to ozone-depleting substances (decision XXVI/9, subparagraphs 1 (a)–(c));

(b) Updated information submitted by parties on their implementation of paragraph 9 of decision XIX/6 (decision XXVI/9, paragraph 3).

6. Outcome of the resumed thirty-sixth meeting of the Open-ended Working Group.

7. Proposed amendments to the Montreal Protocol.

8. Issues related to the phase-out of hydrochloroflourocarbons (decision XIX/6 (paragraphs 12–14)).

9. Potential areas of focus for the assessment panels' 2018 quadrennial assessments.

10. Compliance and data reporting issues: presentation on and consideration of the work and recommended decisions of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol.

11. Other matters.

18. During the adoption of the agenda the parties agreed to discuss under agenda item 11 (Other matters) a draft decision submitted by the European Union on releases of ozone-depleting substances from production processes and opportunities for reducing such releases; the financial issues raised by the Technology and Economic Assessment Panel in an addendum to its June 2015 progress report (see UNEP/Ozl.pro.27/2/Add.1, para. 8 (e)); avoiding unwanted imports of products and equipment containing or relying on substances specified in Annex C to the Montreal Protocol; delays in the transfer of project funds from the implementing agencies of the Multilateral Fund for the Implementation of the Montreal Protocol to some Article 5 parties; and the destruction of ozone-depleting substances.

D. Organization of work

19. The parties agreed to follow their customary procedure and to establish contact groups as necessary, endeavouring to limit the number of groups operating simultaneously to ensure the effective participation of small delegations.

III. Administrative matters

A. Consideration of membership of Montreal Protocol bodies for 2016

20. The Co-Chair requested regional groups to submit nominations to the Secretariat for positions in various bodies under the Montreal Protocol, including officers of the Bureau of the Twenty-Seventh meeting of the Parties, the co-chairs of the Open-ended Working Group and the members of the Executive Committee of the Multilateral Fund and the Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol for 2016.

21. Subsequently, the Secretariat reported that it had received the names of the nominees for the the 2016 membership of the Implemenation Committee and the Executive Committee, as well as for the 2016 co-chairs of the Open-ended Working Group, and that the relevant draft decisions were available on the meeting portal.

B. Financial report of the trust fund and budgets for the Montreal Protocol

22. Introducing the item, the Co-Chair drew attention to the approved and proposed budgets set out in document UNEP/OzL.Pro.27/4/Rev.1 and the financial reports set out in document

UNEP/OzL.Pro.27/4/Add.1. He noted that it had been the practice of the parties at past meetings to establish a budget committee to review budget-related documents and prepare one or more draft decisions on budgetary matters. In accordance with that practice, the parties agreed to establish a budget committee, coordinated by Mr. Delano Verwey (Netherlands) and Mr. Leslie Smith (Grenada), to agree on budgets for the Montreal Protocol trust fund and to prepare a draft decision on financial matters for the Protocol.

23. Subsequently, the co-chair of the budget committee presented a draft decision on the financial report and budget of the trust fund for the Montreal Protocol, which the parties approved for consideration and adoption during the high-level segment.

IV. Issues related to exemptions from Articles 2A–2I of the Montreal Protocol

A. Nominations for essential-use exemptions for 2016

24. Introducing the sub-item, the Co-Chair recalled that the Open-ended Working Group, at its thirty-sixth meeting, had heard a presentation from the Technology and Economic Assessment Panel indicating that no essential-use nominations had been received for chlorofluorocarbons (CFCs) for metered-dose inhalers for the current year and that only one party, China, had submitted a nomination for laboratory and analytical uses of carbon tetrachloride in 2016. China's nomination was for the use of carbon tetrachloride for the testing of oil and grease and total petroleum hydrocarbons in water.

25. One representative, speaking on behalf of a group of parties, expressed a desire to consult China regarding its nomination.

26. It was agreed that interested parties would consult informally and report to the Meeting of the Parties on the results of those consultations.

27. Subsequently, the representative of China said that following the informal consultations agreement had been reached on the nomination for laboratory and analytical uses for China for 2016.

28. The parties then approved a draft decision on China's 2016 essential use exemption for laboratory and analytical uses of carbon tetrachloride for consideration and adoption during the high-level segment.

B. Nominations for critical-use exemptions for 2016 and 2017

29. Mr. Ian Porter, co-chair of the Methyl Bromide Technical Options Committee, gave a presentation on the final recommendations for critical-use nominations for methyl bromide. A summary of the presentation, prepared by the co-chairs of the Methyl Bromide Technical Options Committee, is set out in annex III to the present report.

30. Following the presentation, the representative of Canada said that her country, which continued to support the phase-out of critical-use exemptions for methyl bromide, was doing its utmost to halt the use of the substance. She did not, however, understand the rationale for the Committee's decision not to recommend Canada's one remaining nomination, for the use of 5.261 tonnes for strawberry runners. The adoption of alternatives to methyl bromide for that use, she said, had been prevented by significant regulatory and economic barriers, and the Committee's conclusion that chloropicrin would not contaminate groundwater was premature, as it was based on a published review and computer modelling but did not take into account field trials under actual conditions or trials that had been conducted by the grower. Despite its disagreement with the Committee's decision, she said, Canada had decided to withdraw its nomination for 2017 and would consider resubmitting it at a later date. In the meantime it was willing to provide additional information and wished to participate in any further discussions on critical-use exemptions.

31. The representative of South Africa said that while his country was committed to phasing out the use of methyl bromide, as reflected in the significant reductions in the quantities used in recent years, it had been unable to find suitable alternatives for mills and structures owing to technical difficulties and other challenges such as affordability, downtime and the unavailability of sulphur fluoride. Efforts were under way to register sulphur fluoride for use in his country but the process was not yet complete and the substance therefore remained unregistered for the time being. Expressing disappointment at the decision to revise the nominated amount of 13 tonnes for 2016 down to 5.462 tonnes because relevant information had not been submitted by the deadline set by the Committee, he urged the Committee to reconsider its recommendation, stressing that the economic impact of a failure to secure the nominated amount would threaten the country's food security and undermine its national poverty alleviation strategy.

32. The representative of Australia expressed appreciation for the Committee's final recommendation of the full 29.76 tonne exemption requested for its strawberry runner sector, adding that it had prepared a draft decision on the matter and would welcome a small-group discussion with other interested parties to finalize the text. The representative of the United States of America, also expressing appreciation to the Committee for recommending its nominated amount of 3.240 tonnes for dry cure pork, said that following a review of information on stocks of methyl bromide in the country, it had decided to withdraw its nomination without prejudice to its possible resubmission at a later date.

33. The representative of a developing-country party, pointing out that his country had eliminated methyl bromide consumption for agricultural purposes, with only a very small amount still being used for quarantine and pre-shipment purposes, said that his ministry was at pains to explain to farmers why they should not be permitted to use the substance while more developed countries were still using it, and he urged all parties to switch to suitable alternatives as soon as possible. Another representative, speaking on behalf of a group of parties and echoing that appeal to parties to end the use of methyl bromide, said that he had been encouraged to hear the commitment of South Africa in that regard and congratulated the United States of America on its decision to withdraw its nomination. Encouraging all parties to follow the example of using existing stocks before submitting any further nominations, he said that the experience of the parties for which he spoke demonstrated that alternatives were available; moreover, funding for Article 5 parties for projects on the use of such alternatives was available from the Multilateral Fund.

34. The Co-Chair suggested that all interested parties should join Australia in discussing its proposed draft decision and that South Africa should take part in those discussions after taking up its concerns with the Methyl Bromide Technical Options Committee.

35. Subsequently, following the informal discussions, agreement was reached on the text of the draft decision on critical-use exemptions for methyl bromide for 2016 and 2017.

36. The parties approved the draft decision for consideration and adoption during the high-level segment.

V. Issues related to alternatives to ozone-depleting substances

A. Report by the Technology and Economic Assessment Panel on the full range of alternatives to ozone-depleting substances (decision XXVI/9, subparagraphs 1 (a)–(c))

37. Introducing the sub-item, the co-chair recalled that the initial report by the decision XXVI/9 task force of the Technology and Economic Assessment Panel on alternatives to ozone-depleting substances had been presented and made available at the thirty-sixth meeting of the Open-ended Working Group, during which several parties had provided guidance to the task force on the finalization of the report for consideration by the Twenty-Seventh Meeting of the Parties. An outline of the suggestions provided by the parties was provided in annex I to document UNEP/OzL.Pro.27/2, while an executive summary of the final report of the task force, which had incorporated the comments provided by the parties, was set out in annex II to document UNEP/OzL.Pro.27/2/Add.1.

38. Task force co-chairs Ms. Bella Maranion, Mr. Lamper Kuijpers and Mr. Roberto de Aguiar Peixoto, then gave a presentation on the final report of the task force, entitled “Decision XXVI/9 Task Force Report: Additional Information on Alternatives to Ozone-Depleting Substances”. A summary of the presentation prepared by the presenters is set out in annex III to the present report.

39. Following the presentation, the task force members responded to questions on the presentation from representatives, many of whom expressed appreciation to the task force for its comprehensive report. A general discussion on the issues raised by the Panel in its report then ensued.

1. Questions and answers

40. In response to a question on the appropriateness of the task force’s use of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) classification of climate zones for the building sector, Mr. Kuijpers said that the task force had used that classification as merely one example of a possible approach to defining a high-ambient-temperature zone; the task force report clearly stated that other examples of climate zone definitions existed and that the issue would require further investigation. Reacting to a comment that high ambient temperatures should not be estimated on the basis of annual temperature averages, he clarified that the ASHRAE classification was based on daily average temperatures that were aggregated for up to a year.

41. Responding to additional questions concerning the calculations used in the report to determine whether high-ambient temperatures and comments that the ASHRAE definitions were appropriate for the climate change regime but might not be relevant to ozone layer protection, Mr. Peixoto clarified that ASHRAE maps had been used in the report merely to show that the world had different climate regions based on temperature and humidity levels; the relevant question, which various projects on high-ambient temperatures were seeking to address, was whether refrigeration equipment would function effectively under various extreme conditions. Some preliminary data had already been produced to answer that question, including a report on R-22 and R-410A alternative refrigerants for high ambient-temperature environments published by the Oak Ridge National Laboratory (ORNL), which was available on the ORNL website; once all data were available manufacturers, regulators and other stakeholders would be able to evaluate and assess what steps, including codes and regulations, might be needed to ensure that the refrigeration and air-conditioning sector in regions with extreme conditions was sustainable. Mr. Alaa A. Olama, a member of the task force and co-chair of the Panel's Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee, then provided details on the temperatures and maps discussed in the report.

42. In response to a question regarding the main assumptions made by the task force to develop business-as-usual scenarios for Article 5 parties and non-Article 5 parties and a comment that the model used to devise such scenarios appeared to have incorporated only economic parameters, Mr. Kuijpers explained that the task force had estimated levels of HFC consumption in 2014 or 2015 based on the quantity of installed equipment that used HFC refrigerants, which had been checked against best available production data, and had calculated demand in 2014–2015 on the basis of the gross domestic product or other economic parameters in specific countries. While economic factors were the main reason for the growth of HFC use in both non-Article 5 and Article 5 parties, the model was very sophisticated and included many other parameters, including equipment-based parameters such as leakage, charging and servicing data. Based primarily on economic factors, however, under 2020–2030 business-as-usual scenarios, 50 per cent and nearly 300 per cent growth in demand for high global-warming-potential (GWP) HFCs were expected in non-Article 5 and Article 5 parties, respectively. As for mitigation scenarios, the task force had simply assumed that countries could convert all their equipment in any given year at a certain cost.

43. Regarding assumptions used in the report to estimate the cost of conversion to various technologies, Mr. Kuijpers said that a pragmatic approach had been used to calculate those costs using the incremental cost calculations developed by the Multilateral Fund in the context of the implementation of HCFC phase-out management plans; the task force had not looked at specific refrigerants for use under specific conditions, such as high ambient temperatures, to estimate those costs.

44. With regard to a query on whether the task force had considered the cost of the destruction or elimination of HFC stocks in conversion cost estimates, in particular for countries that did not manufacture HFCs, Mr. Kuijpers said that the costs of conversion applied only to countries that manufactured HFCs; the situations of countries that imported refrigerants for servicing would need to be examined in more detail when assessing servicing costs, on which the report provided only initial estimates. The task force had examined manufacturing, and to some extent servicing, but had not dealt with any other costs, including those associated with HFC destruction, which would need to be examined at a later stage.

2. General discussion

45. In the general discussion, several representatives said that while there were still areas requiring further investigation and certain gaps in information the Panel's report had improved with each iteration and update, with one saying that the latest version provided a wealth of information on a wide range of alternatives to ozone-depleting substances, the challenges of high ambient temperatures and the costs and benefits of each mitigation scenario.

46. The representative of Canada said that his country was working with others on a draft decision for consideration by the parties at the current meeting that would provide a new mandate for the Technology and Economic Assessment Panel to further update its work on alternatives and mitigation scenarios.

47. Another representative said that the scenarios developed and associated costs appeared to be more robustly estimated in the Panel's latest report and that she looked forward to hearing the results of continuing studies on high-ambient-temperature solutions. She thanked the Panel for extending the scenarios to 2030 while acknowledging the uncertainties inherent in such long-term forecasting. Another representative said that the Panel had overemphasized solutions that already existed and had given insufficient attention to the status of alternatives yet to be developed, including in the area of

high ambient temperatures. Another representative highlighted the importance of giving due consideration to such issues as safety, energy efficiency and the economic and social costs of alternatives. Several representatives expressed concern at what they said was a lack of real alternatives on the market in the short term and possibly the medium term, calling for more information on where and when alternatives would become available on a regional basis, along with information on the cost of investing in them.

48. The representative of Canada, speaking also on behalf of Japan, New Zealand, Norway and Switzerland, introduced a draft decision that, like previous decisions of the Meeting of the Parties, requested the Technology and Economic Assessment Panel to produce a report on alternatives to ozone-depleting substances. The report envisaged by the draft decision was intended to focus primarily on areas where updates to the previous report were needed, including with regard to information on the availability of alternatives in various regions, and to extend the mitigation scenarios in the previous report to 2050; to assess the costs and benefits of the various phase-down scenarios envisaged under the proposed amendments to the Montreal Protocol; and to invite the Scientific Assessment Panel to contribute its expertise on the impact of HFCs and on relevant climate parameters. Recognizing that there were other elements that could be added, he said that the draft decision would provide a good starting point for discussion.

49. Several representatives welcomed the draft decision, and in particular its intention to focus mainly on updates in recognition of the many competing demands on the time of the Technology and Economic Assessment Panel. Some representatives requested the inclusion in the proposed report of information on the availability of alternatives in the marine sector, including in particular the fisheries industry, where information was particularly sparse. Another representative suggested that the report should consider the likely socio-economic impacts of the transition from ozone-depleting substances, in particular where the costs of alternatives were high and where a further transition from those alternatives was contemplated. Another representative suggested that the report should also include information on possible alternatives that had not yet entered the market, as well as those currently available, and more detail on the scientific evidence of the impact of HFCs on the climate.

50. Other representatives said that some elements of the draft decision seemed to prejudge the outcomes of the discussions under way in the contact group on HFCs and that discussion of them was premature and unhelpful. Other representatives, however, said that the draft decision was entirely in line with previous similar decisions and would be extremely valuable to the work of the parties.

51. It was agreed that interested parties would consult informally with the aim of producing a revised version of the draft decision for further consideration in plenary.

52. Following the informal consulations and further discussion in plenary the parties approved a revised draft decision for consideration and adoption during the high-level segment.

B. Updated information submitted by parties on their implementation of paragraph 9 of decision XIX/6 (decision XXVI/9, paragraph 3)

53. Introducing the item, the Co-Chair recalled that in paragraph 3 of decision XXVI/9 parties had been encouraged to provide the Secretariat with information on their efforts to promote a transition from ozone-depleting substances that minimized environmental impact. A summary of those efforts had been issued by the Secretariat for the Twenty-Sixth Meeting of the Parties, and the Secretariat had updated it in document UNEP/OzL.Pro.27/11 with new and additional information from Canada, Mexico, Montenegro, Paraguay, Switzerland and the United States of America for consideration at the current meeting.

54. The parties took note of the information provided.

VI. Outcome of the resumed thirty-sixth meeting of the Open-ended Working Group

55. Introducing the item, the Co-Chair recalled that the thirty-sixth meeting of the Open-ended Working Group had been suspended with an agreement that it would resume prior to the Twenty-Seventh Meeting of the Parties to allow the parties to continue their discussions on the feasibility and ways of managing HFCs. The resumed meeting had been held on 29 and 30 October 2015, and the outcome was an agreed mandate for a possible contact group on the feasibility and ways of managing HFCs (UNEP/OzL.Pro.27/12, annex).

56. The parties agreed to establish a contact group on the feasibility and ways of managing HFCs, co-chaired by Mr. Patrick McInerney (Australia) and Mr. Xia Yingxian (China), with the mandate set out in the annex to document UNEP/OzL.Pro.27/12.

57. The result of the contact group's work and the conclusion of the present item are described in paragraph 75 below.

VII. Proposed amendments to the Montreal Protocol

58. Introducing the item, the Co-Chair recalled that four proposals to amend the Montreal Protocol had been submitted for consideration by the Meeting of the Parties at the current meeting, all of which sought to amend the Montreal Protocol to include the phase-down of HFCs. He invited the proponents of the four amendments to present them in turn.

59. The representative of the United States, speaking also on behalf of Canada and Mexico, introduced the proposal of those countries (UNEP/OzL.Pro.27/5). She explained that while it did not retreat from the ambition of the original North American amendment proposal, in the light of comments from parties it had been modified to achieve that ambition in two stages: a scaled-back initial amendment that could be adopted at the current meeting, followed by the negotiation of the remainder of the phase-down schedule and other issues in 2016.

60. The provisions proposed for adoption at the current meeting included a freeze of HFC consumption and production in Article 5 parties by 2021; the first two proposed reduction steps for non-Article 5 parties, to 90 per cent by 2019 and 65 per cent by 2024; the establishment of baselines for Article 5 and non-Article 5 parties (which differed in the proportion of HCFC consumption and production included in their calculation in recognition that the two groups would not achieve the transition away from HFCs at the same speed); and elements that were common to all four amendment proposals on financing, licensing and reporting, the listing of HFCs in an annex to the Protocol, entry into force and clarification that the provisions on emissions of HFCs of the United Nations Framework Convention on Climate Change would remain unchanged.

61. For the second stage, the proposal envisaged the adoption of a decision, at the current meeting, by which the parties would agree to negotiate phase-down schedules for Article 5 and nonArticle 5 parties, provisions on emissions of HFC-23 as a by-product, non-party trade provisions and technology reviews to allow for adjustments of the phase-down schedules. The decision would also ask the Technology and Economic Assessment Panel to assess the feasibility and benefits of the stage-two proposals, their financial implications and the availability of climate-friendly alternatives, especially for use in high ambient temperatures.

62. The first stage would realize two thirds of the benefits of the full proposal, with an estimated 57–59 GT CO2-equivalent emissions avoided by 2050 and a further 32 GT CO2-equivalent emissions to be avoided in the second stage. She said that while many non-Article 5 parties were already taking steps through domestic regulation to limit HFC use the emissions avoided would be significantly greater with the adoption of the proposed amendment. In conclusion, she said, the North American proposal offered the benefits of a clear and simple procedure, allowed sufficient time to address parties' key concerns and had the advantages of resting on the tried and tested measures with which the parties to the Montreal Protocol were familiar. Her delegation, she said, looked forward to discussing the proposal in more detail in the contact group established under agenda item 6.

63. Introducing his country's proposal (UNEP/OzL.Pro.27/6), the representative of India said that it was based on the principle of equitable and fair access to sustainable development and the right of self-determination. His country recognized that while HFCs currently accounted for only 1 per cent of greenhouse gas emissions they were growing at a rate of 8–9 per cent per year and that limiting that growth offered the fastest and most cost-effective option for mitigating climate change. The use of HFCs was largely a by-product of the success of action under the Montreal Protocol to phase out ozone-depleting substances, and it was therefore a responsibility of the parties to deal with it through the Protocol. There was a clear complementarity between the objectives of the Montreal Protocol and the United Nations Framework Convention on Climate Change, and the fact that the phase-out of HCFCs had only just begun in Article 5 parties offered the opportunity to leapfrog from HCFCs directly to non-HFC alternatives. Ideal substitutes for HFCs should be non-toxic and non-flammable, possess low global warming potentials and high energy efficiency, be compatible with existing equipment and be less expensive and more environmentally friendly than HFCs.

64. His country's proposed amendment would establish, for production and consumption in non-Article 5 parties, baseline years of 2013–2015, a freeze by 2016 and a completion of phase-down by 2035. For Article 5 parties the corresponding dates were 2028–2030, 2031 and 2050. The grace

period of fifteen years for Article 5 parties would allow sufficient time for suitable alternatives to be developed and was in line with previous practice under the Montreal Protocol. The phase-down steps for each Article 5 party would be determined by that party and announced five years in advance for each five-year period. HFCs could continue to be used as replacements for HCFCs where low-GWP alternatives were not available.

65. The proposed amendment would introduce a new concept of total conversion cost, rather than incremental cost, as the measure of financial assistance to be delivered; the total conversion cost included would cover the total cost of converting a chemical production plant from HFCs to low-GWP alternatives, including the costs of intellectual property rights and technology transfer. The financial mechanism of the Montreal Protocol would need to provide funding to cover both the full conversion cost and compensation for lost profits following the closure of HFC production facilities.

66. The proposed amendment would list HFCs in two annexes. Annex F would list four sub-groups of substances, differentiated according to the availability of alternatives. The first two would include substances for which alternatives were already available or soon would be, and the last two would include substances for which alternatives were not yet available. HFC-23, on which research was needed to facilitate its use, would be listed in Annex G. The proposed amendment would provide for exemptions for the production and consumption of HFCs for metered-dose inhalers and other medical appliances, as well as essential-use exemptions. The proposed amendment would also exempt feedstock applications from any controls and include licensing of imports and exports, bans on imports and exports to non-parties and requirements for reporting production, imports and exports. As HFCs should continue to be included within the scope of the United Nations Framework Convention on Climate Change and its Kyoto Protocol for the accounting and reporting of emissions, amendments to the Framework Convention and Kyoto Protocol would be necessary.

67. He concluded by observing that India had clarified all queries raised by parties regarding its proposed amendment during the thirty-sixth meeting of the Open-Ended Working Group and saying that he looked forward to discussing any remaining issues.

68. The representative of the European Union introduced the key elements of the European Union proposed amendment (UNEP/OzL.Pro.27/7). The proposed amendment included an ambitious phase-down schedule for non-Article 5 parties, currently the largest users of HFCs, beginning in 2019 with a freeze at 85 per cent of the baseline. The baseline included, as well as the consumption or production of HFCs, the volume of HCFCs allowed under the Montreal Protocol, which was necessary because the speed of phase-out of HCFCs had varied considerably from party to party.

69. While the amendment acknowledged the special situation of developing countries and the need for sufficient time for implementation, it did not do this through the usual Montreal Protocol mechanism of a long grace period. As the Technology and Economic Assessment Panel had confirmed in its latest report on alternatives to ozone-depleting substances seen earlier in the meeting, it was important to undertake the conversion from HFCs as early and rapidly as possible: as HFC use would only increase with economic growth, delay would result not only in greater environmental impact but also higher cost. The amendment therefore proposed that Article 5 parties freeze consumption in 2019 and that a phase-down schedule for those parties be negotiated at a later stage.

70. The freeze and phase-down steps combined the climate impacts of the consumption of HCFCs and HFCs, thereby allowing more time for HFC consumption to be reduced and allowing HFC use to grow with economic development, if necessary. Combining HCFCs and HFCs in such a “basket” approach offered flexibility, enlarging the choice of options and allowing more time for transition in sectors where alternatives might not yet be available, such as stationary air-conditioning.

71. The proposed amendment would also provide for a freeze on HFC production and a phase-down target of 15 per cent by 2040, with interim phase-down steps to be determined by 2020. The Multilateral Fund would remain the financial mechanism, and the European Union was open to discussions with parties regarding the details of the obligations to be agreed. In conclusion, he said that he looked forward to the opportunity to explain in more detail the underlying concepts of the proposal and how they responded to the challenges identified in the mandate of the contact group.

72. The representative of the Federated States of Micronesia, speaking also on behalf of Kiribati, the Marshall Islands, Mauritius, Palau, the Philippines, Samoa and the Solomon Islands, introduced the proposal of those countries (UNEP/OzL.Pro.27/8). Thanking the parties for deciding to move forward on a proposed HFC amendment, first introduced six years earlier, he observed that major steps had been taken in the intervening period, including the development of new alternatives by industry and the introduction of regulations to phase out HFCs in many countries. In agreeing to a mandate for

a contact group at the current meeting, he said, parties had moved from the impossible to the inevitable.

73. Recalling that at earlier meetings of the parties he had illustrated presentations on the proposed amendment with stories, he said that at the current meeting he would not do so because all the parties were together writing not just a story, but history itself. That history had two threads: fairness for all concerned and a purpose to serve the common good rather than the interests of any one country or group. Working together, the ozone family needed to address difficult issues and concerns, which could be captured in three words: financing, flexibility and fairness. He was confident, he said, that the parties would succeed in reaching agreement on all three. In conclusion, he argued that while the Montreal Protocol was already known to be the best multilateral environmental agreement in the world over the next four days parties could show that it could be even better.

74. Following the presentation of the proposed amendments the parties agreed that they would be further discussed in the contact group established under agenda item 6, as described in section VI above.

75. Following the work of the contact group its co-chair presented a draft decision prepared by the contact group entitled the Dubai pathway on hydrofluorocarbons. The parties approved the draft decision for consideration and adoption during the high-level segment.

VIII Issues related to the phase-out of hydrochlorofluorocarbons (decision XIX/6 (paragraphs 12–14))

76. Introducing the item, the Co-Chair recalled that by paragraphs 12–14 of decision XIX/6, the parties had agreed to address in or no later than 2015 certain issues related to the phase-out of HCFCs, namely, the possibility or need for essential-use exemptions for HCFCs for non-Article 5 parties; the need for the 0.5 per cent for servicing provided for in paragraph 3 of the decision for non-Article 5 parties; and possible further reductions in the production of HCFCs for basic domestic needs after 2020, beyond the 10 per cent of baseline allowed until that date. A draft decision on the matter had been introduced by Australia, also on behalf of Canada and the United States, at the thirty-sixth meeting of the Open-ended Working Group, which had decided to forward the draft decision to the Meeting of the Parties for further consideration.

77. The representative of Australia introduced the draft decision, summarizing its main elements.

78. The parties approved the draft decision for consideration and adoption during the high-level segment.

IX. Potential areas of focus for the assessment panels' 2018 quadrennial assessments

A. Terms of reference for the 2018 quadrennial assessment

79. Introducing the sub-item, the Co-Chair recalled that by the time of the thirty-sixth meeting of the Open-ended Working Group the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel had completed their 2014 quadrennial assessments in accordance with decision XXIII/13. The three panels had also completed a synthesis of their assessments, and a summary of the key messages of that synthesis was set out in Annex II to document UNEP/OzL.Pro.27/2/Add.1. In addition, the European Union and Switzerland had put forth a draft decision on potential areas of focus for the 2018 quadrennial assessments of the panels, which was before the parties for consideration at the current meeting.

80. The representative of the European Union said that while the draft decision took into account comments of other parties made during the thirty-sixth meeting of the Open-ended Working Group, as well as during subsequent consultations, further discussions would be necessary at the current meeting to finalize it.

81. The parties agreed that interested parties should consult informally with the aim of presenting a revised draft decision for consideration in plenary.

82. Following the informal consulations the parties approved a revised draft decision for consideration and adoption during the high-level segment.

B. Co-chairs of the Scientific Assessment Panel

83. Introducing the sub-item, the Co-Chair said that Mr. A.R. Ravishankara and Mr. Ayite-Lo Nohende Ajavon were resigning from their positions as co-chairs of the Scientific Assessment Panel and that the parties at the current meeting would need to elect their successors. Echoed by many parties, he thanked the two for their dedication, leadership, skills and long years of service to the Montreal Protocol and the cause of protecting the ozone layer, and he led the parties in a round of applause.

84. The representatives of the United States of America and Zimbabwe, speaking on behalf of Rwanda and the rest of the African States, proposed that Mr. David Fahey, Director of the Chemical Sciences Division of the National Oceanic and Atmospheric Administration, and Mr. Bonfils Safari, Professor, College of Science and Technology, University of Rwanda, respectively, be appointed to succeed Mr. Ravishankara and Mr. Ajavon.

85. The parties approved a draft decision endorsing the appointment of Mr. Fahey and Mr. Safari as co-chairs of the Scientific Assessment Panel for consideration and adoption during the high-level segment.

C. Technology and Economic Assessment Panel organizational issues

86. The Co-Chair, introducing the sub-item, said that the Technology and Economic Assessment Panel had issued an addendum to its 2015 progress report with important recommendations for consideration by the parties (see UNEP/OzL.Pro.27/2/Add.1, para. 8). Furthermore, as indicated in the Panel's 2015 progress report, the four-year terms of some experts serving on the Panel and its technical options committees would end in 2015, and the Panel was recommending candidates for appointment as their successors.

87. In the ensuing discussion, the representative of Australia expressed support for the Panel's proposal to streamline its operations by combining the Chemicals Technical Options Committee and the Medical Technical Options Committee, as well its recommendations regarding the experts to be appointed as co-chairs of the new combined committee. Her delegation would be submitting a draft decision on the proposal. The representative of Japan said that her delegation would also submit a draft decision on the matter.

88. One representative said that, in order to ease the financial pressure on the assessment panels and their technical options committees, parties putting forth candidates to serve as members of those bodies should guarantee funding for their activities for the duration of their terms.

89. Subsequently, the representative of Japan presented a draft decision on Technology and Economic Assessment Panel organizational and membership changes submitted by Australia, Brazil, China, Colombia, Costa Rica, Japan, the Netherlands, the United Kingdom of Great Britain and Northern Ireland and the Bolivarian Republic of Venezuela, which had been discussed and revised in the course of informal consultations among interested parties.

90. The parties approved the draft decision for consideration and adoption during the high-level segment.

X. Compliance and data reporting issues: presentation on and consideration of the work and recommended decisions of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol

91. The President of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, Ms. Nancy Seymour (Canada), presented a report on the outcomes of the fifty-fourth and fifty-fifth meetings of the Committee, outlining the three draft decisions that the Committee had approved for consideration by the Twenty-Seventh Meeting of the Parties. She observed that the work of the Committee during 2015 had been lighter than in previous years thanks to the progress that parties had made in complying with their obligations to phase out ozone-depleting substances under the Montreal Protocol; the Committee had needed to prepare just two draft decisions dealing with cases of non-compliance.

92. The third draft decision dealt with data and information provided by the parties in accordance with Article 7 of the Montreal Protocol. Only four parties – Democratic Republic of Congo, Dominica, Somalia and Yemen – had yet to report their annual data for 2014. She applauded the eighty-four parties that had reported their data for 2014 by 30 June 2015, in accordance with decision XV/15,

which had enabled the Committee to carry out much useful work at its fifty-fourth meeting, in July 2015.

93. She also welcomed the fact that all parties that had submitted data reporting forms for 2014 containing blank cells had responded to requests for clarification of those cells by the Secretariat. She recalled decision XXIV/14 of the Meeting of the Parties, by which the Meeting of the Parties had requested parties to affirmatively specify zero quantities in their Article 7 data reporting forms rather than simply leaving cells blank.

94. Turning to the two draft decisions on non-compliance, she said that one dealt with non-compliance by Bosnia and Herzegovina with the Protocol's HCFC consumption control measures for 2013. As outlined in the draft decision, Bosnia and Herzegovina had submitted to the Committee a plan of action to ensure its return to compliance with the Protocol's consumption control measures and confirmed that it had introduced a comprehensive set of policies and measures to control consumption and in 2014 the party had returned to compliance with its obligations. The Committee had noted with appreciation Bosnia and Herzegovina's prompt actions to correct its state of non-compliance and intended to monitor the party's progress in future years.

95. The remaining draft decision dealt with non-compliance by Libya with the Protocol's HCFC consumption control measures for 2013 and 2014. The Committee had noted with appreciation the plan of action submitted by Libya to return to compliance, including its commitment to do so by 2018, together with its commitment to monitor the enforcement of its system for licensing the import and export of ozone-depleting substances, to implement a ban on the procurement of air-conditioning equipment containing HCFCs in the near future, and to consider a ban on the import of such equipment. The Committee had recognized that the political and security situation in the country rendered enforcement of those measures particularly challenging, and it intended to monitor closely the country's progress in returning to compliance.

96. The Committee, she added, continued to play its role of closely monitoring the return to compliance of parties that had been in non-compliance, and she was pleased to confirm that all such parties were in compliance with their obligations under the Protocol.

97. She concluded by reiterating the observation of many of her predecessors that the ozone community had built a compliance system that was internationally regarded with respect and as a model to be emulated under other international agreements. The non-compliance procedure of the Montreal Protocol was a flexible and sophisticated system that continued to function successfully, and she expressed confidence that parties' data reports for 2015 would reveal the success of their compliance with the 2015 phase-out targets for the consumption and production of HCFCs – 10 per cent below baseline for Article 5 parties and 90 per cent below baseline for non-Article 5 parties.

98. She concluded by thanking for their hard work and dedication the representatives of the Multilateral Fund secretariat and the implementing agencies, the members of the Ozone Secretariat and all her colleagues on the Committee.

99. The parties approved the draft decisions forwarded by the Implementation Committee for consideration and adoption during the high-level segment.

XI. Other matters

A. Releases of ozone-depleting substances from production processes and opportunities for reducing such releases

100. Introducing the sub-item, the Co-Chair said that, as discussed during the adoption of the agenda, the European Union had submitted a draft decision on releases of ozone-depleting substances from production processes and opportunities for reducing such releases.

101. The representative of the European Union said that the draft decision took into account comments on an earlier version of it discussed at the thirty-sixth meeting of the Open-end Working Group, as well as the outcomes of a workshop on carbon tetrachloride held in Zurich, Switzerland, in October 2015. The current version of the draft decision requested the Technology and Economic Assessment Panel and the Scientific Assessment Panel to continue their analysis of the discrepancies between observed atmospheric concentrations of ozone-depleting substances and data reported by parties on their consumption and production of such substances, with a focus on carbon tetrachloride production. Further consultations would be needed to finalize the draft decision before presenting it for consideration by the parties at the current meeting.

102. Following informal consultations the parties approved the draft decision for consideration and adoption during the high-level segment.

B. Technology and Economic Assessment Panel financial matters

103. The representative of Switzerland said that the Technology and Economic Assessment Panel, in the addendum to its 2015 progress report, had drawn attention to increasing difficulties in obtaining adequate funding to cover the travel and other costs of members of the Panel and its technical options committees and had requested that the parties consider creating a funding mechanism to address the problem. He noted that at its sixth meeting the Conference of the Parties to the Vienna Convention had responded to a similar issue with regard to the funding of ozone-related monitoring and research activities by requesting the United Nations Environment Programme to establish an extrabudgetary fund for receiving voluntary contributions from the Parties to the Vienna Convention and international organizations. His delegation wished to explore the possibility of establishing a similar fund for defraying the costs of Panel members. Several other representatives expressed interest in such an approach.

104. One representative said that scientists working on a voluntary basis for the Montreal Protocol bodies should sign forms declaring that in undertaking such work they had no conflicts of interest with regard to other activities in which they were involved. Another representative said that the issue of conflicts of interest was covered in the rules of procedure of the Technology and Economic Assessment Panel.

105. The parties agreed that interested parties would consult informally with a view to developing a draft decision on the matter.

106. Subsequently the representative of Switzerland presented a draft decision submitted by his country on ensuring the continuation of the work of the assesssment panels. The parties approved the draft decision for consideration and adoption during the high-level segment.

C. Unwanted imports of products and equipment containing or relying on hydrochlorofluorocarbons

107. The representative of Kyrgyzstan introduced a conference room paper containing a draft decision on avoiding the unwanted import of products and equipment containing or relying on HCFCs, submitted by Armenia, Belarus, the European Union, Kyrgyzstan and the Russian Federation. He noted that decision X/9 of the Tenth Meeting of the Parties had established a list of countries that did not manufacture for domestic use and did not wish to import products and equipment whose functioning relied on Annex A or Annex B substances. He noted that a number of parties had introduced bans or restrictions on the import of products and equipment containing or relying on substances listed in Annex C, specifically HCFCs, and he suggested that such parties might wish to inform exporting countries of that fact through existing mechanisms under the Montreal Protocol. The draft decision accordingly would request the Secretariat to maintain a list of parties that did not wish to receive products and equipment containing or relying on substances listed in Annex C.

108. The parties approved the draft decision for consideration and adoption during the high-level segment.

D. Delays in the disbursement of funds to recipient countries

109. Introducing the sub-item, the Co-Chair recalled that during adoption of the agenda one representative, speaking on behalf of a group of countries, had expressed concern at what he said were delays in the disbursement of project funds to Article 5 parties by the implementing agencies of the Multilateral Fund.

110. In the ensuing discussion many parties expressed concern at the prospect of such delays, which one said could last for many months, suggesting that they could in turn cause delays in the completion of projects, thus impeding parties' ability to achieve their phase-out targets and pushing them into non-compliance with their obligations under the Protocol.

111. One representative urged that a preventive approach be adopted and a solution found in dialogue. Another representative said that delayed disbursement could create problems at the government level in countries, for example when projects placed before legislatures for approval were not implemented on schedule because of funding delays. Another said that it would be useful to know more about the nature of the problem, including its causes and whether it pertained to funding for institutional strengthening projects or investment projects. One representative said that, in addition to being delayed, funds were sometimes deposited in the wrong accounts, which also caused delays in project implementation.

112. One representative noted that under a standing agenda item for all of its meetings the Executive Committee looked at delays in the implementation of projects, including with regard to the disbursement of funds, and their possible impact on compliance. The Committee typically issued directions to the relevant implementing agency and monitored the situation until it was resolved. He suggested that parties could work through their regional representatives to bring cases of delayed disbursement of project funds before the Executive Committee. Another representative, speaking on behalf of a group of parties, acknowledged that the issue was on the agenda of the Executive Committee and expressed the willingness of the parties for whom she spoke to listen and to understand the concerns expressed.

113. The parties agreed that the issue should be noted in the present report as a means of sounding an early warning regarding the possible consequences of delays and the need to prevent them.

E. Destruction of ozone-depleting substances

114. Introducing the sub-item, the representative of Samoa said that the destruction of ozone-depleting substances presented a particular difficulty for developing countries with no destruction facilities of their own. She therefore proposed that the matter be placed on the agenda of an appropriate meeting of the Open-ended Working Group in 2016. The parties agreed that the matter would be included on the agenda for a meeting of the Open-ended Working Group in 2016.

Part two: High-level segment (4 and 5 November 2015)

I. Opening of the high-level segment

115. The high-level segment of the Twenty-Seventh Meeting of the Parties to the Montreal Protocol was opened at 10.20 a.m. on Wednesday, 4 November 2015, by Mr. Mikkel Sorensen (Denmark), Vice-President of the Bureau of the Twenty-Sixth Meeting of the Parties, who presided over the opening of the segment in the absence of the President of the Bureau, Mr. Rodrigo Siles Lora (Bolivia).

116. Opening statements were delivered by Mr. Bin Fahad; Mr. Achim Steiner, Executive Director of UNEP; and Mr. Sorensen.

A. Statement by the representative of the Government of the United Arab Emirates

117. Mr. Bin Fahad welcomed the participants on behalf of the Government and people of the United Arab Emirates, thanking all those who had contributed to the organization and success of the current meeting. The United Arab Emirates, he said, attached great importance to the Montreal Protocol and had undertaken a wide range of legislative, policy and other actions at the national level to implement its provisions, including by regulating ozone-depleting substances, monitoring imports and exports, combating illicit trade, providing incentives to the private sector to recover and recycle gases in the air-conditioning sector, developing plans and activities to raise awareness on the part of industry and the public about the consequences of ozone depletion and putting in place an HCFC phase-out plan. At the current meeting, participants were seeking consensus on a number of key issues, although differences of opinion still surrounded certain matters, including how to deal with HFCs under the Protocol. It was important to discuss the challenges and assess the economic, social and environmental effects of proposed actions, but it was time to reach consensus on sustainable and applicable solutions for HFC management in line with the challenges that countries had identified. A major step had been taken in establishing a contact group on the matter, and he urged its members to reconcile their differences of opinion and identify solutions. Financing remained an important issue for parties operating under paragraph 1 of Article 5, and it was important to undertake a comprehensive assessment of the needs and requirements of developing countries with regard to the feasibility, effectiveness, affordability and availability of alternatives. He commended the work of the Technology and Economic Assessment Panel and called on the Panel to accelerate its work to finalize its assessment of alternatives. In conclusion, he reaffirmed the commitment of the United Arab Emirates to the implementation of the Vienna Convention and the Montreal Protocol.

B. Statement by the representative of the United Nations Environment Programme

118. The Executive Director of UNEP said that it was an honour and a pleasure to be once again in the United Arab Emirates, which had become an important centre for dialogue and diplomacy on environmental matters. The Montreal Protocol, he said, had been one of the great success stories of

history and well illustrated the mission of multilateralism – to solve major issues in an equitable and transformative way through cooperation. It was easy to forget what the world had looked like 30 years earlier, when science had first opened the world's eyes to the phenomenon of ozone layer depletion through a pivotal article by the scientists Mario Molina and Sherwood Rowland in Nature magazine. Since then the world had witnessed the greatest planetary repair job ever attempted, through a journey from scientific discovery to diplomacy, the deployment of technology, the development of financial agreements and the establishment of monitoring and accountability mechanisms. When the hole in the ozone layer was discovered the challenge it posed had seemed insurmountable, but the world had responded to that challenge more quickly than was thought possible. Rather than being unaffordable and a threat to industry and the economy, the response to that challenge had delivered an extraordinary return on investment, with an investment of $3.5 billion resulting in avoided health and agricultural losses that alone were estimated at more than two trillion dollars.

119. The success of the Protocol raised the question of whether it had come to the end of its useful life. It was clear, however, that that was not the case, and the Montreal Protocol would continue to be an important instrument into the future. First, it would be a waste to lose such a highly effective and proven instrument and platform, underpinned by science and working in harmony with many agencies in the United Nations system and offering great opportunities as a vehicle for future collaboration. Second, the Montreal Protocol was embedded in a far larger set of challenges, including climate change. While the Protocol had made enormous contributions to addressing climate change by eliminating ozone-depleting substances that were also greenhouse gases, HFCs, a class of greenhouse gases introduced under the Protocol as non-ozone depleting alternatives to HCFCs, threatened to make an equally significant contribution to worsening climate change. The discussions in recent years about how to address that problem, trying to find equilibrium between the mandates of the climate change and ozone-layer-protection regimes, had been difficult, but the current meeting in Dubai offered an opportunity for action on HFCs that was ripe for seizing. Whether the Montreal Protocol should address HFCs, whether such action would compromise development and whether the necessary technology was available were all valid questions, but those in the Montreal Protocol community held the answers. Leadership was needed to align the science, technology and financial considerations with the politics of international cooperation. He urged participants to honour the legacy of their predecessors who had made the Montreal Protocol such an effective instrument by taking from Dubai the message that the Protocol had only just begun to demonstrate its relevance.

120. After delivering his statement, Mr. Steiner paid tribute to the work of Mr. A.R. Ravishankara and Mr. Ayite-Lo Nohende Ajavon, retiring co-chairs of the Protocol's Scientific Assessment Panel, who for many years had made outstanding contributions to ozone layer protection as scientists, as visionaries and as co-chairs of the Scientific Assessment Panel. Presenting them with commemorative awards, he said that their wisdom and professionalism would be greatly missed, and he thanked them for their contributions to the Montreal Protocol, to humanity and to the future of the planet.

121. He then paid tribute to Mr. Bin Fahad, who, in his role as Minister of Environment and Water of the United Arab Emirates, had helped make it possible, both practically and politically, for the Montreal Protocol community to come together in Dubai. Praising his work in bringing the environment to centre stage in the Emirates, he presented him too with a commemorative award and a separate award for the Ministry of Environment and Water.

C. Statement by the President of the Twenty-Sixth Meeting of the Parties to the Montreal Protocol

122. Mr. Sorensen, expressing gratitude to the Government of the United Arab Emirates for its hospitality, reported with satisfaction that at its meeting the previous week the Bureau had confirmed that the decisions adopted at the Twenty-Sixth Meeting of the Parties had been implemented and that all appropriate follow-up action had been taken. Commending the parties on their achievements in phasing out ozone-depleting substances over the previous 29 years, including through the universal ratification of all amendments to the Montreal Protocol, he stressed that the work of implementing the Protocol had yet to be completed and that it was important not to relax their efforts to that end. In regard to the agenda of the current meeting, he drew particular attention to the ongoing discussion on proposed amendments to the Protocol for the phase-down of HFCs and urged all parties to work together towards a consensual decision that enabled the Montreal Protocol mechanisms to be used to ensure the protection of the climate through decisive action to curb and reverse the growth of HFCs. In view of the quantities of ozone-depleting substances still being nominated for essential and critical uses, he urged the parties to strive to identify the safe alternatives and substitute technologies needed to ensure the total phase-out of those substances. The parties, he said, would hopefully consider all the items on the current agenda with the same spirit of compromise and cooperation that had guided their deliberations since the First Meeting of the Parties.

123. In conclusion, he expressed appreciation and gratitude to three members of the Technology and Economic Assessment Panel who were stepping down after many years of service to the Panel and its technical options committees: Mr. Paul Ashford (United Kingdom of Great Britain and Northern Ireland), Mr. Miguel Quintero (Colombia) and Mr. Masaaki Yamabe (Japan).

II. Organizational matters

A. Election of officers for the Twenty-Seventh Meeting of the Parties to the Montreal Protocol

124. At the opening session of the high-level segment of the meeting, 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 Twenty-Seventh Meeting of the Parties to the Montreal Protocol:

President:	Ms. Virginia Poter	Canada (Western European and other States)
Vice-Presidents:	Ms. Rose Mukankomeje	Rwanda (African States)
	Ms. Tumau Neru	Samoa (Asian-Pacific States)
	Mr. Sabir Atajanov	Kyrgyzstan (Eastern European States)
Rapporteur:	Mr. Elias Gomez	Dominican Republic (Latin American and Caribbean States)

B. Adoption of the agenda of the high-level segment of the Twenty-Seventh Meeting of the Parties to the Montreal Protocol

125. The following agenda for the high-level segment was adopted on the basis of the provisional agenda contained in document UNEP/OzL.Pro.27/1:

1. Opening of the high-level segment:
   (a) Statement by the representative of the Government of the United Arab Emirates;
   (b) Statement by the representative of the United Nations Environment Programme;
   (c) Statement by the President of the Twenty-Sixth Meeting of the Parties to the Montreal Protocol.
2. Organizational matters:
   (a) Election of officers for the Twenty-Seventh Meeting of the Parties to the Montreal Protocol;
   (b) Adoption of the agenda of the high-level segment of the Twenty-Seventh Meeting of the Parties to the Montreal Protocol;
   (c) Organization of work;
   (d) Credentials of representatives.
3. Presentations by the assessment panels on their synthesis of the 2014 quadrennial assessments.
4. Presentation 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, the Multilateral Fund secretariat and the Fund's implementing agencies.
5. Statements by heads of delegation.
6. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Twenty-Seventh Meeting of the Parties.
7. Dates and venue for the Twenty-Eighth Meeting of the Parties to the Montreal Protocol.
8. Other matters.

9. Adoption of decisions by the Twenty-Seventh Meeting of the Parties to the Montreal Protocol.

10. Adoption of the report.

11. Closure of the meeting.

126. Responding to a query from one representative, the President said that consideration of the issues included under item 11 (Other matters) of the preparatory segment agenda would continue in informal meetings in the margins of the high-level segment.

C. Organization of work

127. The parties agreed to follow their customary procedures. In addition, they agreed to convene a ministerial round-table discussion on how the institutions and mechanisms of the Montreal Protocol could assist parties in managing hydrofluorocarbons (HFCs).

D. Credentials of representatives

128. The Bureau of the Twenty-Seventh Meeting of the Parties to the Montreal Protocol approved the credentials of the representatives of 92 of the 128 parties represented at the meeting. The Bureau provisionally approved the participation of other parties on the understanding that they would forward their credentials to the Secretariat as soon as possible. The Bureau 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 Bureau 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 Bureau further recalled that representatives of parties not presenting credentials in the correct form could be precluded from full participation 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 2014 quadrennial assessments

129. Mr. Ravishankara, on behalf of the Montreal Protocol's three assessment panels, gave a presentation on the key findings of the synthesis report of the panels' 2014 quadrennial assessments. Expressing his thanks to the parties to the Montreal Protocol for appointing him to the post of co-chair of the Scientific Assessment Panel, and to all those who had supported the assessment panels in their work, he presented a summary of the achievements of the Montreal Protocol in phasing out ozone-depleting substances and reducing the rate of ozone depletion, thereby avoiding large increases in ultraviolet radiation. Since almost all ozone-depleting substances were greenhouse gases, action under the Protocol had also reduced the rate of global warming. He concluded by outlining key future challenges, including the need to avoid an increase in the use of HFCs. A summary of the presentation, prepared by Mr. Ravishankara, is set out in annex III to the present report.

130. In response to a question about the best way in which to make further progress, Mr. Ravishankara commended the system of quadrennial assessments, through which the parties set broad terms of reference for the panels and then received and considered their findings, which he said was a very effective means of ensuring that scientific findings were given full consideration. Mr. Ashley Woodcock, co-chair of the Technology and Economic Assessment Panel, added that an early response to scientific signals could prevent difficult and costly problems from arising later; a key strength of the Montreal Protocol was the way that it had been able to link science to policy and encourage early action.

131. Responding to a question about the impact of HCFCs and HFCs on ozone depletion and climate change, Mr. Paul Newman, co-chair of the Scientific Assessment Panel, said that the full quadrennial assessment report contained detailed information on the global-warming potentials of many HCFCs and HFCs. In addition, a recent study of the five HFCs expected to be in most widespread use by 2050 suggested that all of them possessed low ozone-depleting potentials. That could be extrapolated to other HFCs, although those with low global-warming potentials could be expected to possess very low ozone-depleting potentials. Ms. Bella Maranion, co-chair of the Technology and Economic Assessment Panel, added that the Panel's technical options committees always considered impacts on the climate and the ozone layer when they looked in detail at the alternatives to ozone-depleting substances. Following the presentation the President thanked the assessment panels for the key role that they played in the Protocol's implementation process and for

the excellent synthesis report, and he thanked in particular Mr. Ravishankara on the eve of his retirement from the Panel.

132. The parties took note of the information presented.

IV. Presentation by the Chair of the Executive Committee of the Multilateral Fund for the Implementation on the work of the Executive Committee, the Multilateral Fund secretariat and the Fund's implementing agencies

133. Mr John Thompson (United States of America), in his capacity as Chair of the Executive Committee of the Multilateral Fund, reported on progress in the implementation of the decisions adopted by the Executive Committee of the Multilateral Fund at its seventy-fourth meeting, in July 2015, and on preparations for its seventy-fifth meeting, which was due to take place in November 2015, outlining the information provided in document UNEP/OzL.Pro.27/10.

134. He reported that the number of parties with approved HCFC phase-out management plans (HPMPs) had remained at 140, but two of the five parties without approved plans had submitted them for consideration at the Committee's seventy-fifth meeting. Criteria for funding for stage II of HPMPs had been approved, taking into account the cut-off date for eligibility and second-stage conversions, transitioning to low-global-warming-potential alternatives, the needs of small and medium-sized enterprises, and the concerns of countries with low or very low HCFC consumption. Stage II of HPMPs had been approved for two parties; six parties had submitted stage II of their plans for consideration at the seventy-fifth meeting and a further 33 had received funding to prepare them. The 2015 tranche of the HCFC production phase-out management plan for China, the world's largest producer of HCFCs, had also been approved, and Mexico had submitted a request to conduct a technical audit of its HCFC production sector. Full implementation of the HPMPs approved to date would address 26 per cent of the total baseline HCFC consumption of Article 5 parties.

135. The analysis of remaining eligible HCFC consumption considered by the Executive Committee showed that the majority was in the servicing and air-conditioning sectors. The Executive Committee had accordingly approved funding for a feasibility study for district cooling and the preparation of 13 projects to demonstrate low-GWP technologies, and at its seventy-fifth meeting would consider further requests for funding for demonstration projects, including some in the air-conditioning manufacturing sector, and two district cooling feasibility studies.

136. Pursuant to decision XXVI/9, the Executive Committee had allocated additional funding to the conduct of national surveys of alternatives to ozone-depleting substances, aiming to obtain information on the alternatives currently in use, by sector and sub-sector, and forecasts of the growth in use of the most common alternatives. To date surveys had been approved for 85 parties, and another 44 parties had submitted requests for funding for consideration at the seventy-fifth meeting. After conducting a review of institutional strengthening projects, the Executive Committee had decided to approve further such projects and renewals at a level 28 per cent higher than that historically agreed, with a minimum annual funding of $42,500 per party.

137. He then reported on behalf of the Multilateral Fund's four implementing agencies: the United Nations Development Programme (UNDP); UNEP; the United Nations Industrial Development Organization (UNIDO) and the World Bank. During 2015 UNDP had assisted 47 parties with the implementation of stage I of their HPMPs and one party with implementation of stage II of its HPMP; it had also assisted seven countries in preparing stage II of their HPMPs. UNDP, he said, had been at the forefront of technical assessments and demonstration projects for cost-effective alternatives to HCFCs that minimized environmental impacts and promoted low-carbon development, particularly for applications where such alternatives were not currently available.

138. UNEP, through its Compliance Assistance Programme, had assisted all 148 Article 5 parties to comply with their Montreal Protocol obligations, including through support to low and very low-volume-consuming countries and regional networks, South-South cooperation, capacity-building activities and global information clearing-house services, with an emphasis on encouraging the adoption of low global-warming-potential and energy-efficient technologies in the refrigeration servicing sector and promoting the safe use of flammable refrigerants. For the first time, Compliance Assistance Programme personnel had been invited to participate in regional environmental ministerial forums in Africa and the Asian-Pacific region.

139. UNIDO was currently implementing HCFC phase-out management plans in 68 countries. While four countries had experienced compliance difficulties in 2013, with the support of UNIDO all

but one had returned to compliance. Work had commenced on three HCFC phase-out management plans that had been approved in 2014, and assistance had been provided to parties to facilitate their total phase-out of methyl bromide in 2015. UNIDO had also co-implemented performance testing of low-GWP alternatives for air conditioners in high-ambient-temperature countries and begun the preparation of seven demonstration projects.

140. All the parties to whom the World Bank had provided assistance were on track to achieving their stage I HCFC production and consumption phase-out targets for 2015. To date, the Executive Committee had approved more than $150 million in funding for the World Bank's partners, with the aim of phasing out more than 5,700 ODP-tonnes of HCFCs under approved HPMPs.

141. In conclusion, he thanked the members of the Executive Committee, the Multilateral Fund Secretariat and the bilateral and implementing agencies for their hard work and commitment; as Chair of the Executive Committee he expressed great pride in their collective achievements and success.

142. The parties took note of the information presented.

V. Round-table discussion

143. On the morning of 4 November 2015, the high-level segment included a 90-minute round-table discussion under agenda item 5, which was moderated by Mr. Fernando Lugris, Deputy Director-General, Ministry of Foreign Affairs, Uruguay. The panel comprised seven discussants, listed in the order in which they spoke: Mr. Bin Fahad; Mr.Steiner; Ms. Gina McCarthy, Administrator, Environmental Protection Agency, United States of America; Mr. Xavier Sticker, Ambassador for the Environment, Foreign Affairs Department, France; Mr. Greg Hunt, Minister for the Environment, Australia; Mr. Abdullahi Majeed, State Minister, Ministry of Environment and Energy, the Maldives; and Mr. Manoj Kumar Singh, Joint Secretary, Ministry of Environment, Forest and Climate Change, India.

144. Before the discussion the participants viewed a three-minute video that outlined the contribution of the Montreal Protocol to climate change mitigation while highlighting the need for continued action, in particular on HFCs as a greenhouse gas whose use the Protocol had promoted, inadvertently contributing to global warming. Mr. Lugris recalled that during the round-table discussion held at the Twenty-Sixth Meeting of the Parties most panellists had identified HFC management as one of the critical challenges facing the Montreal Protocol over the next decade. Following the projection of the video, he proceeded to ask the panellists questions related to that challenge.

145. Mr. Bin Fahad, asked whether the current meeting could be described as historic, said that his Government was proud to host a meeting at which the parties were discussing how to take the Protocol to a new frontier in order to ensure that ozone protection did not come at the expense of the world's climate. He said that the establishment of a contact group at the current meeting to discuss how to move forward on the management of HFCs was a positive step forward that he hoped would lead to concrete results, and he urged the parties to join together to strengthen the Protocol and support climate efforts for the benefit of humanity.

146. Mr. Steiner, asked if the Montreal Protocol should be seen as a tool for sustainable development, said that environmental treaties such as the Protocol were successful because they were part of a sustainable development framework for action. The Protocol possessed the key elements that since 1992 had defined the essence of international cooperation, namely, a strong scientific basis, a focus on technology and capacity-building, the principle of common but differentiated responsibilities, and differentiated timelines for action by developed and developing country parties. In addition, its impacts and benefits were measured not simply in terms of ozone layer protection but also in terms of costs avoided to society, including future generations, in areas such as health, agriculture and fisheries. The Protocol had delivered great sustainable development benefits that made it an example to be emulated and put it at the centre of the post-2015 development agenda, and it could continue to provide benefits for future generations should parties seize the opportunity to tackle HFCs.

147. Asked about the role of the private sector in tackling HFCs through the Protocol, Mr. Steiner said that since the treaty's inception industry had been instrumental to addressing ozone depletion and that its innovation and technology would be essential for dealing with HFCs. An important lesson from the Protocol was that public policies, including global treaties, were critical to defining the future markets that determined present-day investments; it was therefore a question of sending a clear signal to the global marketplace that industry investments in alternatives to HFCs were needed while Governments found a way to foster a transition to such alternatives. A partnership between science, industry and government was the magic formula for success.

148. Asked about the benefits of addressing HFCs through the Protocol, Ms. McCarthy suggested that the Protocol was the way to deliver benefits on HFCs because it had achieved great success and had in place the institutions to address the challenge of HFCs in the sectors in which action was needed. In addition, it was the responsibility of the Protocol to deal with HFCs because its success had largely been possible through a shift to climate-damaging chemicals. The four amendment proposals on HFCs indicated that the Protocol was widely seen by the parties as the venue of choice for addressing HFCs. One such proposal, presented by the United States, Canada and Mexico, built on elements that had been key to the Protocol's success, including the Multilateral Fund, seen as the gold standard for technology transfer and the provision of support to countries, expert assessment panels, which provided technical and financial information on how goals could be achieved leaving no country behind, and the delivery of technological solutions by industry. The three countries were interested in working with the parties to find ways to address their concerns, including with regard to high-ambient temperatures, timelines and financing, and believed that an amendment would send a clear signal to industry that the Protocol's success in addressing ozone-depleting substances would not be complete until parties had addressed their obligation to address HFCs.

149. Mr. Sticker, asked about the possible implications of HFC discussions at the current meeting on the forthcoming twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris, said that the countries of the European Union saw the issue of HFCs within the larger context of the Sustainable Development Goals, under which action on climate was required. He said that the establishment at the current meeting of a contact group to discuss HFCs represented tangible progress after six years of negotiations, but more time would be required over the following months to address the concerns of the parties and to leave no one behind. At the same time, it was essential that the Twenty-Seventh Meeting of the Parties adopt a formal decision to address HFCs in a serious and inclusive way and send a positive message to the climate negotiators in Paris.

150. Mr. Lugris then asked Mr. Hunt, Mr. Majeed and Mr. Singh to reflect on the benefits and challenges associated with using the institutions of the Montreal Protocol to address HFCs.

151. Mr. Hunt said that while the ozone treaties were the most successful environmental treaties in the United Nations system, having saved 1.6 million lives, protected 47 million pairs of eyes and spared over 200 million people from skin cancer, they had created the challenge posed by HFCs. There was no question that the Montreal Protocol was the only arena in which HFCs could be addressed effectively, and the time to do so was now. To move forward, the challenges of developing countries and high-ambient temperature countries would have to be addressed by embracing the principle of flexibility, and tools and mechanisms would be needed to support those countries through the Multilateral Fund. At the current meeting the parties could make real history, if not by agreeing to the North American amendment proposal then by developing a roadmap with an agreement in principle, incorporating the notion of flexibility, to manage HFCs under the Montreal Protocol.

152. Mr. Majeed said that a particular challenge for his country had been to find HFC-free alternatives in the refrigeration and air-conditioning sector, where almost all alternatives to HCFCs were HFCs that would continue to be used unless the country received assistance to enable it to obtain and adapt to low-GWP alternatives, including in the fisheries sector, which was an important component of its economy. Regarding opportunities, he said that cooperation and persistence were key to achieving progress and expressed confidence that they would lead to positive results.

153. Mr. Singh said that two reasons why it was logical for the Montreal Protocol to take on the challenge of HFCs were that the Protocol was seen as the most successful environmental treaty and that HFCs were a by-product of action under the Protocol to protect the ozone layer. Should HFCs be addressed under the treaty, it was important to recognize that the climate issue was of greater sensitivity than that of ozone depletion, given that greenhouse gases were linked to livelihood, food and energy security and that action to curtail them could be seen as a barrier to the economic growth aspirations of developing countries. It was also necessary to address, in the context of the Multilateral Fund, changes that had occurred since the 1990s in the field of intellectual property rights, in particular the emergence of application patents that might limit the right of countries like India and China to manufacture alternatives to HFCs. While its greenhouse gas emissions were significantly lower than those of developed countries, India was actively looking to find solutions to climate change, which was a calamity that in its view should be addressed by using all the technological knowledge and resources available for the common good and not as an opportunity to increase profits through technologies protected by patents.

154. Asked whether action should be taken even in the absence of alternatives to HFCs, Mr. Steiner said that the experience of the Montreal Protocol showed that the treaty provided sufficient flexibility

to accommodate particular concerns and that those concerns, which in some cases were commercial, should never stand in way of action that could deliver great returns for the common good. The Protocol had been successful because nothing prevented the parties from designing flexible mechanisms to address the concerns of countries and the lack of some alternatives while moving forward collectively and sending a signal to markets and Governments about where the future lay.

155. Ms. McCarthy said that, given the Technology and Economic Assessment Panel's projections for HFC consumption, the climate impacts of such consumption and the cost of delaying action, it was important to take action immediately, even if alternatives had not yet been fully developed, and to use the Montreal Protocol's institutions to carry out the research and technology transfer needed to support such action. The experience of the Protocol showed that as soon as a target for phasing out ozone-depleting substances was established, markets would respond and investments in alternatives would be made.

156. Asked whether dealing with HFCs through the Montreal Protocol might create a conflict between the Protocol and the climate regime, Mr. Sticker said that the latter already allowed for the possibility of dealing with HFCs in the Montreal Protocol, and it was the responsibility of the parties to the Protocol to address the negative climate impacts they had created by promoting HFC use.

157. Responding to a question regarding the role of the Multilateral Fund in dealing with HFCs, Mr. Singh said that his Government's amendment proposal envisaged that the date of eligibility for financing should be the date of the proposed HFC freeze for Article 5 parties, i.e., 2031, given that the majority of HFC production was in developing countries, where conversion to low-GWP or HFC-free alternatives had not yet begun. Developing countries, which were still using HCFCs, would need time, possibly 15 years, and support from the Multilateral Fund, to use HFCs in the absence of commercially available substitutes. In addition, the Fund should finance conversions to low-GWP technologies, including the cost of acquiring intellectual property rights, for developing countries.

158. Mr. Hunt said that Multilateral Fund support would be available to countries to address the challenge of HFCs, but an agreement to move forward on the substances was first needed. With regard to technology, Australian industry was confident that once it had a reliable timeframe it would be able to deliver alternative technologies over a period of two decades or less, so it had expressed a desire for an agreement on HFCs, and substantial work was already under way on the next generation of refrigerants, fire retardants and other gases.

159. Mr. Sticker said that the European Union amendment proposal addressed the concerns expressed by the representative of India through flexibility, differentiation between Article 5 parties and non-Article 5 parties and financial support for the latter via the Multilateral Fund. Regarding patents, he said that only a small number of existing alternatives to HFCs were subject to patents.

160. Ms. McCarthy said that financial support had always been a critical component of the Montreal Protocol. It was understood that it would remain so with regard to HFCs and that flexibility would be needed to support second and third conversions, using technical and financial information provided by the Technology and Economic Assessment Panel. It would be difficult, however, to provide additional resources or support unless the amendment was adopted.

161. Following the panel discussion Mr. Lugris invited comments from the parties. Questions raised, which the panellists did not have the opportunity to address owing to a lack of time, included whether developing countries could be assured of having access to patented products and technologies; whether addressing HFCs through the Montreal Protocol would require amending Article 4 of the United Nations Framework Convention on Climate Change and Articles 2, 5, 7 and 10 of the Kyoto Protocol; whether thought had been given to the need to ensure that alternatives to HFCs would not create unforeseen environmental problems; and whether, given its important role in the Montreal Protocol, the private sector could contribute to reducing HFC consumption by granting licenses to the Multilateral Fund under preferential conditions or free of charge.

VI. Statements by heads of delegation

162. During the high-level segment statements were made by the heads of delegation of the following parties, listed in the order in which they spoke: Saudi Arabia, China, Zimbabwe, Bahrain, Mexico, Australia, Ghana, Canada, Bosnia and Herzegovina, Timor-Leste, Malaysia, Sudan, Guatemala, Ethiopia, Maldives, Syria, Japan, European Union, Nigeria, Palau, Rwanda, Islamic Republic of Iran, Singapore, Philippines, Somalia, Bangladesh, Burkina Faso, Indonesia, Oman, Kyrgyzstan, Kenya, India, Micronesia (Federated States of) and Mauritius. The representatives of the International Pharmaceutical Aerosol Consortium and the International Institute of Refrigeration also delivered statements.

163. Representatives of many parties who spoke expressed thanks to the Government and people of the United Arab Emirates for their hospitality in hosting the current meeting. Many also thanked UNEP and the Ozone Secretariat for the successful organization of the meeting. Appreciation was also expressed by many representatives to the Multilateral Fund Secretariat, implementing agencies, donor partners, the assessment panels, international organizations and other stakeholders for their guidance and support in ensuring the continued successful implementation of the Montreal Protocol.

164. Many representatives reiterated their commitment to the objectives of the Montreal Protocol and described activities being undertaken at the national level to implement its measures, including through the instigation of supportive policies, programmes, regulations and laws and awareness-raising and educational activities. A broad variety of national actions were described, including the phase-out or phase-down of CFCs, HCFCs, halons, carbon tetrachloride and methyl bromide; the destruction of ozone-depleting substances; the training of technicians to deal with ozone-depleting substances used in air-conditioning and refrigeration; incentives to convert to ozone and climate friendly alternatives; and in public-private partnerships. Some representatives spoke of country-level measures to control the import and export of ozone-depleting substances, for example through regulations and quotas, licensing systems and the training of customs officials and other officers. One representative mentioned the value of regional cooperation and synergies with other multilateral environmental agreements in assisting parties to implement measures under the Protocol at the national level. One representative said that his country had shown what could be achieved through small but crucial interventions. A number of representatives said that their countries would continue to strive to comply with their obligations under the Protocol.

165. Several representatives placed the Montreal Protocol in broader perspective, noting the historical significance of the thirtieth anniversary of the Vienna Convention and the huge benefits that it had bestowed not just in protecting the ozone layer but also in terms of lives saved, human ill health averted and environmental destruction prevented or mitigated. A number of representatives stressed the current importance of the Montreal Protocol, at a time when the Sustainable Development Goals had recently been endorsed and the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change was about to commence, and the need for the Montreal Protocol to position itself adroitly within a rapidly changing and increasingly complex global development agenda, particularly in view of its respected position as an impressively successful and much admired global instrument. Some representatives spoke of what they said was the continuing relevance of such principles as corporate social responsibility and common but differentiated responsibilities. One representative said that the developing countries varied widely in their development: some had the capacity and resources to embrace the post-2015 development agenda, while others needed to undergo political, social and economic transformation to achieve the Sustainable Development Goals, including those linked to the Vienna Convention and the Montreal Protocol.

166. A number of representatives reflected on the success of the Montreal Protocol and the factors behind it. One representative said that the depletion of the ozone layer had been a classic example of the tragedy of the commons, and its recovery had been an extraordinary success of international cooperation. Other representatives noted the wide range of partners that had collaborated in ensuring that the Protocol had achieved its objectives, including the assessment panels, donors, the Multilateral Fund, the implementing agencies, and the OzonAction Compliance Assistance Programme, enabling Article 5 parties to comply with their obligations. One representative said that the Protocol was proof that action on environmental challenges transcended national borders and was testament to the results that could be achieved through collective and coordinated action. One representative, speaking on behalf of a group of parties, said that the achievement of the Montreal Protocol, and the manner in which it had achieved its objectives – including through provisions that took account of the circumstances and requirements of developing countries, the financial and technical support of the Multilateral Fund, and the monitoring and reporting provisions under the compliance regime – would have been unimaginable at the time the damage to the ozone layer had first been reported.

167. Many representatives drew attention to the challenges still faced by developing countries, many of which would benefit from further financial and technical assistance. Some representatives highlighted the particular problems inherent in geographical location, as in the case of small island developing States and mountainous States, particularly in the context of climate change, while the challenges faced by States with high ambient temperatures remained an issue of central importance. Some representatives said that conflicts within their borders had made it very difficult for them to comply with their obligations under multilateral environmental agreements and to protect human health and the environment. Destruction of banks of ozone-depleting substances, combating illegal trade and the safe installation and maintenance of alternative technologies were identified as other concerns facing many parties; in each case, financial and technical assistance would help resolve the

matter, yielding global as well as national benefits. Some representatives of small island developing States highlighted the need to find more climate-friendly alternatives in the marine sector, specifically in the fisheries industry, saying that innovative solutions to the problem might help catalyse the development of a range of technologies with low global-warming potential.

168. Several representatives highlighted the role of the Multilateral Fund in providing financial assistance to developing countries to facilitate their compliance with the Protocol. One representative said that it was essential that the Fund be used efficiently and effectively to ensure implementation by all parties. A number of representatives said that more assistance was required to help Article 5 parties to resolve continuing challenges, including the identification of feasible, cost-effective and viable alternatives to ozone-depleting substances. One representative, for example, highlighted the emergence of resistance in insect pests following the phase-out of methyl bromide for post-harvest grain storage uses and requested knowledge transfer to assist parties facing similar problems.

169. Much debate focused on the matter of the phase-out of HCFCs and the alternatives to their use. A number of representatives provided information on the current status of their HCFC phase-out management plans. Several representatives said that Article 5 parties had been placed under considerable pressure by the accelerated phase-out of HCFCs and the subsequent difficulties posed by the high global-warming potential of HFCs, including additional economic and logistical burdens on the industrial and service sectors. Another representative said that industry in developing countries was facing growing challenges due to a lack of safe, environment-friendly, technically proven, commercially viable and cost-effective alternative technologies, especially in the case of micro, small and medium-sized enterprises. Another representative outlined the challenges facing developing countries in the adoption of low-GWP alternatives, namely, cost-effectiveness, the availability of appropriate technology and components, competition from cheaper high-GWP alternatives, the slow development of alternative technologies and negative market factors.

170. Several representatives urged that strenuous efforts be made to replace HFCs with low-GWP alternatives so that the benefits derived from the recovery of the ozone layer were not outweighed by the adverse impacts of climate change and other global environmental problems. One representative said that a priority of his Government was the steady phase-out of ozone-depleting substances globally, taking into account environmental and health benefits and the feasibility of alternative technologies, including energy efficiency, cost-effectiveness and safety requirements; in that regard, phasing down production and consumption of HFCs was necessary for the global environment.

171. Many representatives expressed their views on the proposed amendments to the Montreal Protocol to deal with HFCs. Several urged adoption of a Dubai roadmap setting out a tentative schedule for taking the matter forward. Several representatives said that the parties to the Montreal Protocol should accept their responsibility to take urgent action to phase down HFCs using the mechanisms available to the Protocol given that HFC-based alternatives to HCFCs had been a technology option of choice under the Protocol. A number of parties expressed willingness to accommodate the concerns of those parties more cautious about dealing with HFCs under the Protocol, including with regard to financing and technical support, the specific circumstances of countries, the allocation of responsibility for accounting and reporting of emissions of HFCs and the schedule of any proposed phase-down. On the lack of available alternatives on the market, some parties said that industry would respond to demand once a commitment had been made to deal with HFCs under the Protocol. One representative said that inclusion of HFCs under the mandate of the Protocol would be in keeping with the holistic approach adopted by the Sustainable Development Goals.

172. A number of representatives said that it was premature to bring control of HFCs under the purview of the Montreal Protocol given the outstanding issues that were yet to be resolved, including the availability of alternatives that were technologically and economically viable; the important matter of technology options that were effective in high ambient temperatures; the lack of certainty that the alternatives identified would not lead to further environmental problems, as had been the case with HFCs; the safety, flammability and energy efficiency of alternatives; and the legal issues pertaining to the allocation of responsibilities between the Vienna Convention and the United Nations Framework Convention on Climate Change and their respective protocols. One representative advocated a compromise, flexible approach for the phase-down of HFCs using the expertise and institutions of the Montreal Protocol while continuing to include HFCs within the scope of the Climate Change Convention and its Kyoto Protocol for accounting and reporting of emissions.

173. Several representatives said that their countries had already taken proactive measures to identify and introduce viable, low-GWP alternatives in accordance with local technological, regulatory, economic and environmental conditions. One representative encouraged the Technology and Economic Assessment Panel to continue its work on assessing the availability of technically

feasible, environmentally sound and economically viable alternatives. Another representative highlighted the methodology of the Montreal Protocol, saying that it did not shy away from challenges but saw constraints as an opportunity to innovate.

174. In conclusion, a number of representatives expressed their visions for the future of the Montreal Protocol. Several supported the adoption of an approach that would include mitigation of the adverse effects of climate change through use of zero-GWP or low-GWP substances. One representative said that the success of the Montreal Protocol in protecting the ozone layer in isolation would not be a major cause for celebration if other environmental problems were not adequately resolved. Another representative said that the spirit of global cooperation should be maintained for the benefit of humankind and the protection of the environment. Finally, another representative urged the adoption of a broader, more holistic long-term approach that gave careful consideration to the solutions adopted under the Protocol to ensure they did not result in unintended adverse consequences.

VII. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Twenty-Seventh Meeting of the Parties

175. The Co-Chair of the preparatory segment reported that the work of the preparatory segment had concluded successfully, and various draft decisions had been approved for consideration and adoption during the high-level segment. After enumerating those draft decisions he thanked all concerned for their hard work and for the spirit of cooperation and compromise that had been evident throughout the negotiations.

VIII. Date and venue of the Twenty-Eighth Meeting of the Parties to the Montreal Protocol

176. The President read a message from the Government of Rwanda confirming its desire to host the Twenty-Eighth Meeting of the Parties; the Secretariat, he said, was working with the Government of Rwanda to determine the dates of the meeting. The representative of the Dominican Republic conveyed an offer by his Government to host the Twenty-Ninth Meeting of the Parties in Punta Cana in 2017.

IX. Other matters

177. The parties took up no other matters during the high-level segment.

X. Adoption of decisions by the Twenty-Seventh Meeting of the Parties to the Montreal Protocol

178. *The Meeting of the Parties decides*:

Decision XXVII/1: Dubai pathway on hydrofluorocarbons

Recognizing the Montreal Protocol's history of success in achieving collaborative and consensus-based outcomes and that hydrofluorocarbons (HFCs) are replacements for ozone-depleting substances that parties to the Montreal Protocol are already successfully phasing out,

1. To work within the Montreal Protocol to an HFC amendment in 2016 by first resolving challenges by generating solutions in the contact group on the feasibility and ways of managing HFCs during Montreal Protocol meetings;

2. To recognize the progress made at the Twenty-Seventh Meeting of the Parties on the challenges identified in the mandate of the contact group agreed at the resumed thirty-sixth meeting of the Open-ended Working Group (listed in annex I to the present decision,) on the feasibility and ways of managing HFCs, including development of a common understanding on issues related to flexibility of implementation, second and third stage conversions, guidance to the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, enabling activities for capacity-building and the need for an exemption for high-ambient-temperature countries, and to endorse the concepts listed in annex II to the present decision;

3. To recognize that further progress still needs to be made, in particular with respect to other challenges identified in the contact group mandate, for example conversion costs, technology transfer and intellectual property rights;

4. To hold in 2016 a series of Open-ended Working Group meetings and other meetings, including an extraordinary meeting of the parties;

5. To continue consideration at the meetings mentioned in paragraph 4 above of items 6 and 7 of the agenda for the Twenty-Seventh Meeting of the Parties (UNEP/Ozl.Pro. 27/1), including the submissions set out in documents UNEP/OzL.Pro.27/5, UNEP/OzL.Pro.27/6, UNEP/OzL.Pro.27/7 and UNEP/OzL.Pro.27/8);

Annex I to decision XXVII/1

Mandate for a possible contact group on the feasibility and ways of managing HFCs

The Open-ended Working Group of the Parties to the Montreal Protocol at its thirty-fifth meeting held in Bangkok from 22 to 24 April 2015, agreed that "it would continue to work inter-sessionally in an informal manner to study the feasibility and ways of managing HFCs, including, inter alia, the related challenges set out in annex II to the [report of the thirty-fifth meeting of the Open-ended Working Group], with a view to the establishment of a contact group on the feasibility and ways of managing HFCs at the thirty-sixth meeting of the Open-ended Working Group" (UNEP/OzL.Pro.WG.1/35/6, para. 128).

The informal meeting was convened on the 12-13 of June in Vienna on the above mentioned basis.

The parties have recognised in their interventions the success of the Montreal Protocol and its institutions in phasing out ODSs.

The management of HFCs is applicable to both A5 and non-A5 parties.

Parties agree that nothing should be considered agreed until everything is agreed.

Parties agree that they shall first resolve the challenges mentioned below by generating solutions in a contact group.

- Relevance and recognition of the special situation of developing countries and the principles under the Montreal Protocol which have enabled sufficient additional time in the implementation of commitments by A5 countries,
- Maintain the MLF as the financial mechanism, and to agree that additional financial resources will be provided by non-A5 parties to offset costs arising out of HFC management for A5 parties if obligations are agreed to. In this regard, key elements for financial support from the MLF for A5 parties will be developed by the contact group to provide guidance to the ExCom of the MLF, taking into account the concerns of parties,
- The elements in paragraph 1(a) of decision XXVI/9 including IPR issues in considering the feasibility and the ways of managing HFCs,
- Flexibility in implementation that enables countries to set their own strategies and set their own priorities in sectors and technologies,
- Exemption process and a mechanism for periodic review of alternatives including the consideration of availability or lack of availability of alternatives in all sectors in A5 countries and special needs for high ambient countries, based on all the elements listed in paragraph 1(a) of decision XXVI/9,
- Relationship with the HCFC phase out,
- Non-party trade provisions, and
- Legal aspects, synergies and other issues related to the UNFCCC in the context of HFC management under the MP,

Then, the parties will discuss in the contact group the ways of managing HFCs including the amendment proposals submitted by the parties.

Annex II of the report of the 35th Open-ended Working Group meeting

Challenges to be addressed

- Energy efficiency
- Funding requirements

- Safety of substitutes
- Availability of technologies
- Performance and challenges in high ambient temperatures
- Second and third conversions
- Capacity-building
- Non-party trade provisions
- Synergies with the United Nations Framework Convention on Climate Change (legal, financial aspects)
- Relationship with the HCFC phase-out
- Ecological effects (effects on fauna and flora)
- Implications for human health
- Social implications
- National policy implications
- Challenges to the production sector
- Rates of penetration of new alternatives
- Exemptions and ways to address lack of alternatives
- Technology transfer
- Flexibility in implementation

Annex II to decision XXVII/1

Issues raised and discussed in detail as part of the challenges during the contact group will be further discussed, in a direction consistent with the record of the discussion.

Funding

Maintain the MLF as the financial mechanism and agree that additional financial resources will be provided by non A5 parties to offset costs arising out of HFC management for A5 parties if obligations are agreed to.

Flexibility

A5 parties will have flexibility to prioritize HFCs, define sectors, select technologies/alternatives, elaborate and implement their strategies to meet agreed HFC obligations, based on their specific needs and national circumstances, following a country driven approach.

The ExCom shall incorporate the principle in the above mentioned paragraph in relevant guidelines and its decision making process.

2nd and 3rd conversions

Enterprises that have already converted to HFCs in phasing out CFCs and/or HCFCs will be eligible to receive funding from the MLF to meet agreed incremental costs in the same manner as enterprises eligible for 1st conversions.

Guidance to the ExCom

It is understood that guidelines and/or methodologies will have to be developed on the following issues related to HFC control measures, if agreed:

- Determination of incremental costs
- Calculation of incremental costs
- Cost effectiveness thresholds
- Energy efficiency and climate impacts of projects

Enabling activities

Enabling activities will be supported by the MLF in any HFC phase down agreement.

- Capacity building and training for handling HFC alternatives in the servicing sector, the manufacturing and production sectors
- Institutional Strengthening
- Article 4b Licensing
- Reporting
- Demonstration projects
- Developing national strategies

HAT Exemption

The need for an exemption for high ambient temperature countries

It is understood that the remaining challenges will be further discussed.

Decision XXVII/2: Essential-use exemption for laboratory and analytical uses for 2016 in China

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Chemicals Technical Options Committee,

Recalling decision XI/15, by which the parties, among other things, eliminated the use of ozone-depleting substances for the testing of oil, grease and total petroleum hydrocarbons in water from the global exemption for laboratory and analytical uses,

Recalling also decision XXIII/6, by which parties operating under paragraph 1 of Article 5 of the Montreal Protocol were allowed until 31 December 2014 to deviate from the existing ban on the use of carbon tetrachloride for the testing of oil, grease and total petroleum hydrocarbons in water in individual cases where such parties considered doing so to be justified, and in which it was clarified that any deviation beyond that should take place only in accordance with an essential-use exemption in respect of the use of carbon tetrachloride for the testing of oil, grease and total petroleum hydrocarbons in water beyond 2014,

Noting that China has reported difficulty in implementing existing alternatives to the use of carbon tetrachloride for the testing of oil, grease and total petroleum hydrocarbons in water and has indicated that it needs more time for the revision and promotion of national standards and has expressed its willingness to take the measures necessary to implement the alternatives as soon as possible,

1. To encourage China, which has applied for an exemption, to complete the revision of its relevant national standard and to ensure that a revised national standard is brought into force as soon as possible with a view to ensuring a smooth transition to a method that does not use ozone-depleting substances;

2. To authorize the level of consumption for China for 2016 necessary to satisfy essential uses of carbon tetrachloride for the testing of oil, grease and total petroleum hydrocarbons in water, as specified in the annex to the present decision;

Annex to decision XXVII/2

Essential-use authorizations for 2016 for carbon tetrachloride for the testing of oil, grease and total petroleum hydrocarbons in water

(Metric tonnes)

Party	*2016*
China	70

Decision XXVII/3: Critical-use exemptions for methyl bromide for 2016 and 2017

Noting with appreciation the work of the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee,

Recognizing the significant reductions in critical-use nominations for methyl bromide by many parties,

Recalling paragraph 10 of decision XVII/9,

Recalling also that all parties that have nominated critical-use exemptions are to report data on stocks of methyl bromide using the accounting framework agreed to by the Sixteenth Meeting of the Parties,

Recalling further paragraph 1 of decision XXV/4, in which the Meeting of the Parties requested that, by the thirty-sixth meeting[1] of the Open-ended Working Group, Australia submit the available results of its research programme,

Noting with appreciation that, in accordance with paragraph 2 of decision XXV/4, Canada submitted the available results of its assessment of the impact of chloropicrin on groundwater to the Technology and Economic Assessment Panel in August 2015,

Recognizing that the production and consumption of methyl bromide for critical uses should be permitted only if methyl bromide is not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide,

Recognizing also that parties operating under critical-use exemptions should take into account the extent to which methyl bromide is available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide in licensing, permitting or authorizing the production and consumption of methyl bromide for critical uses,

1. To permit, for the agreed critical-use categories for 2016 and 2017 set forth in table A of the annex to the present decision for each party, subject to the conditions set forth in the present decision and in decision Ex.I/4 to the extent that those conditions are applicable, the levels of production and consumption for 2016 and 2017 set forth in table B of the annex to the present decision, which are necessary to satisfy critical uses, with the understanding that additional levels of production and consumption and categories of use may be approved by the Meeting of the Parties in accordance with decision IX/6;

2. That parties shall endeavour to license, permit, authorize or allocate quantities of methyl bromide for critical uses as listed in table A of the annex to the present decision;

3. That each party that has an agreed critical-use exemption shall renew its commitment to ensuring that the criteria in paragraph 1 of decision IX/6, in particular the criterion laid down in paragraph 1 (b) (ii) of decision IX/6, are applied in licensing, permitting or authorizing critical uses of methyl bromide, with each party requested to report on the implementation of the present provision to the Ozone Secretariat by 1 February for the years to which the present decision applies;

Annex to decision XXVII/3

Table A

Agreed critical-use categories

(Metric tonnes)

2017	
Australia	Strawberry runners 29.760
2016	
Argentina	Strawberry fruit 71.25 ; tomato 58
China	Ginger, protected 21.0 ; ginger, open field 78.75
Mexico	Strawberry, nursery 43.539 ; raspberry, nursery 41.418

[1] This reference to the thirty-sixth meeting of the Open-ended Working Group should be understood to imply that the submission is required before the appropriate Open-ended Working Group meeting to be held in 2016 in order to take into account the additional meetings of the Open-ended Working Group on HFCs in both 2015 and 2016.

South Africa	Mills 5.462 ; houses 68.6

Table B

Permitted levels of production and consumption[a]

(Metric tonnes)

2017	
Australia	29.760
2016	
Argentina	129.25
China	99.75
Mexico	84.957
South Africa	74.062

[a] Minus available stocks.

Decision XXVII/4: Response to the report by the Technology and Economic Assessment Panel on information on alternatives to ozone-depleting substances

Noting with appreciation the September 2015 report of the task force of the Technology and Economic Assessment Panel addressing the issues listed in subparagraphs 1 (a)–(c) of decision XXVI/9,

1. *To request* the Technology and Economic Assessment Panel, if necessary in consultation with external experts, to prepare a report for consideration by the Open-ended Working Group at its thirty–seventh meeting, and thereafter an updated report to be submitted to the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer in 2016, that would:

(a) Update, where necessary, and provide new information on alternatives to ozone-depleting substances, including not-in-kind alternatives, based on the guidance and assessment criteria provided in subparagraph 1 (a) of decision XXVI/9 and taking into account the most recent findings on the suitability of alternatives at high-ambient temperatures, highlighting in particular:

(i) The availability and market penetration of these alternatives in different regions;

(ii) The availability of alternatives for replacement and retrofit of refrigeration systems in fishing vessels, including in small island countries;

(iii) New substances in development that could be used as alternatives to ozone-depleting substances and that could become available in the near-future;

(iv) The energy efficiency associated with the use of these alternatives;

(v) The total warming impact and total costs associated with these alternatives and the systems where they are used;

(b) Update and extend to 2050 all the scenarios in the decision XXVI/9 report;

Decision XXVII/5: Issues related to the phase-out of hydrochlorofluorocarbons

Aware that parties operating under paragraph 1 of Article 5 of the Montreal Protocol are taking measures to reduce and eventually eliminate the production and consumption of the ozone-depleting substances listed in Annex C, group I (hydrochlorofluorocarbons),

Recognizing that there is some uncertainty about the future use of hydrochlorofluorocarbons by parties not operating under paragraph 1 of Article 5 after 2020 for essential uses and for servicing existing refrigeration and air-conditioning equipment, in accordance with paragraph 6 (a) of Article 2F of the Montreal Protocol,

Recalling paragraphs 12, 13 and 14 of decision XIX/6, in which the Meeting of the Parties indicated that further consideration by the parties of the issues of essential uses, servicing and basic domestic needs should occur by 2015 at the latest,

1. To request the Technology and Economic Assessment Panel, in relation to Annex C, group I, substances:

(a) To identify sectors, including subsectors, if any, where essential uses for parties not operating under paragraph 1 of Article 5 may be needed after 2020, including estimations of the volumes of hydrochlorofluorocarbons to be used;

(b) To assess the future refrigeration and air-conditioning equipment servicing requirements between 2020 and 2030 of parties not operating under paragraph 1 of Article 5 and to assess whether there is a need for servicing in other sectors;

(c) To report on recent volumes of production to satisfy basic domestic needs, projected estimates of such future production and estimated needs of parties operating under paragraph 1 of Article 5 to satisfy basic domestic needs beyond 2020;

2. To invite parties to provide relevant information to the Ozone Secretariat by 15 March 2016 for inclusion in the Panel's assessment;

3. To request the Panel to submit its report to the Open-ended Working Group at its thirty-seventh meeting, in 2016;[2]

Decision XXVII/6: Potential areas of focus for the 2018 quadrennial reports of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel

1. To note with appreciation the excellent and highly useful work conducted by the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel in preparing their 2014 quadrennial assessment reports, including the 2015 synthesis report;

2. To request the three assessment panels to prepare quadrennial assessment reports in 2018, to submit them to the Secretariat by 31 December 2018 for consideration by the Open-ended Working Group and by the Thirty-First Meeting of the Parties to the Montreal Protocol in 2019 and to present a synthesis report by 30 April 2019, noting that the panels should continue to exchange information, including on all sectors, on alternatives and on the issue of high-ambient temperatures, during the process of developing their respective reports in order to provide comprehensive information to the parties to the Montreal Protocol;

3. To encourage the assessment panels to more closely involve relevant scientists from parties operating under paragraph 1 of Article 5 with a view to promoting gender and regional balance, to the best of its ability, in the work of producing the reports;

4. To encourage the assessment panels to use defined, consistent units and consistent terminology throughout for better comparability;

5. To request the assessment panels to bring to the notice of the parties any significant developments which, in their opinion, deserve such notice, in accordance with decision IV/13;

6. To request the Environmental Effects Assessment Panel, in drafting its 2018 report, to consider the most recent scientific information regarding the effects on human health and the environment of changes in the ozone layer and in ultraviolet radiation, together with future projections and scenarios for those variables, taking into account those factors stipulated in Article 3 of the Vienna Convention for the Protection of the Ozone Layer;

7. To request the Scientific Assessment Panel to undertake, in its 2018 report, a review of the scientific knowledge as dictated by the needs of the parties to the Montreal Protocol, as called for in the terms of reference for the panels,[3] taking into account those factors stipulated in Article 3 of the Vienna Convention, including estimates of the levels of ozone-layer depletion attributed to the remaining potential emissions of ozone-depleting substances and an assessment of the level of global emissions of ozone-depleting substances below which the depletion of the ozone layer could be comparable to various other factors such as the natural variability of global ozone, its secular trend over a decadal timescale and the 1980 benchmark level;

[2] This reference to the thirty-seventh meeting of the Open-ended Working Group should be understood to refer to an appropriate meeting of the Open-ended Working Group in 2016.

[3] UNEP/OzL.Pro.1/5, annex VI.

8. To request the Technology and Economic Assessment Panel, in its 2018 report, to consider the following topics, among others:

(a) The impact of the phase-out of ozone-depleting substances on sustainable development;

(b) Technical progress in the production and consumption sectors in the transition to alternatives and practices that eliminate or minimize emissions to the atmosphere of ozone-depleting substances, taking into account those factors stipulated in Article 3 of the Vienna Convention;

(c) Technically and economically feasible choices for the reduction and elimination of ozone-depleting substances in all relevant sectors, including through the use of alternatives, taking into account their performance, and technically and economically feasible alternatives to ozone-depleting substances in consumption sectors, taking into account their overall performance;

(d) The status of banks containing ozone-depleting substances and their alternatives, including those maintained for essential and critical uses, and the options available for handling them;

(e) Accounting for production and consumption for various applications and relevant sources of ozone-depleting substances and their alternatives;

Decision XXVII/7: Investigation of carbon tetrachloride discrepancies

Reiterating its concern about the discrepancy between observed atmospheric concentrations and data on carbon tetrachloride reported in the 2014 assessment reports of the Technology and Economic Assessment Panel and the Scientific Assessment Panel, indicating that the mismatch between bottom-up inventories and global top-down estimates of carbon tetrachloride remains unresolved,

Noting with concern that derived emissions of carbon tetrachloride, based on its estimated lifetime and its accurately measured atmospheric abundances, have become much larger over the last decade than those from reported production and usage, notwithstanding that some of the discrepancy could be explained by additional sources unrelated to reported production, such as contaminated soils and industrial waste, and that additional explanations could include underreported releases to the atmosphere and incorrect partial lifetimes (stratosphere, ocean or soil),

Recalling decisions IV/12, X/12, XVI/14, XVIII/10, XXI/8 and XXIII/8,

1. To request the Technology and Economic Assessment Panel and the Scientific Assessment Panel to continue their analysis of the discrepancies between observed atmospheric concentrations and reported data on carbon tetrachloride and to report and provide an update on their findings to the Twenty-Eighth Meeting of the Parties;

Decision XXVII/8: Avoiding the unwanted import of products and equipment containing or relying on hydrochlorofluorocarbons

Noting with appreciation the historical role of decision X/9, on the Establishment of a list of countries that do not manufacture for domestic use and do not wish to import products and equipment whose continuing functioning relies on Annex A and Annex B substances, adopted by the Tenth Meeting of the Parties in November 1998, in limiting the use and furthering the phase-out of substances specified in Annex A and Annex B to the Montreal Protocol during the implementation of country programmes on phasing out chlorofluorocarbons and halons,

Taking into consideration that decision X/9 covers only the substances specified in Annex A and Annex B to the Montreal Protocol,

Bearing in mind that during the implementation of country programmes on phasing out hydrochlorofluorocarbons parties may take advantage of the positive experience of implementation of the main provisions of decision X/9, particularly in developing countries, by introducing bans or restrictions on the import of products and equipment containing or relying on substances specified in Annex C to the Montreal Protocol (hydrochlorofluorocarbons),

Taking into consideration that some parties have already introduced bans or restrictions on the import of products and equipment containing or relying on hydrochlorofluorocarbons and therefore wish to inform exporting countries of that fact through existing mechanisms under the Montreal Protocol,

1. To invite those parties that do not permit the importation of products and equipment containing or relying on hydrochlorofluorocarbons from any source to inform the Secretariat, on a voluntary basis, if they so choose, that they do not consent to the importation of such products and equipment;

2. To request the Secretariat to maintain a list of parties that do not want to receive products and equipment containing or relying on hydrochlorofluorocarbons, which shall be distributed to all parties by the Secretariat and updated on an annual basis;

Decision XXVII/9: Data and information provided by the parties in accordance with Article 7 of the Montreal Protocol

Noting with appreciation that 193 of the 197 parties that should have reported data for 2014 have done so and that 84 of those parties reported their data by 30 June 2015 in accordance with decision XV/15,

Noting that 140 of those parties reported their data by 30 September 2015 as required under paragraph 3 of Article 7 of the Montreal Protocol,

Noting with concern, however, that the following parties have not reported 2014 data: Democratic Republic of Congo, Dominica, Somalia and Yemen,

Noting that their failure to report their 2014 data in accordance with Article 7 places those parties in non-compliance with their data-reporting obligations under the Montreal Protocol until such time as the Secretariat receives their outstanding data,

Noting also that a lack of timely data reporting by parties impedes the effective monitoring and assessment of parties' compliance with their obligations under the Montreal Protocol,

Noting further that reporting by 30 June each year greatly facilitates the work of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol in assisting parties operating under paragraph 1 of Article 5 of the Protocol to comply with the Protocol's control measures,

1. To urge the Democratic Republic of Congo, Dominica, Somalia and Yemen, where appropriate, to work closely with the implementing agencies to report the required data to the Secretariat as a matter of urgency;

2. To request the Implementation Committee to review the situation of those parties listed in paragraph 1 above at its fifty-sixth meeting;

3. To encourage parties to continue to report consumption and production data as soon as figures are available, and preferably by 30 June each year, as agreed in decision XV/15;

Decision XXVII/10: Non-compliance with the Montreal Protocol by Bosnia and Herzegovina

Noting that Bosnia and Herzegovina ratified the Montreal Protocol on Substances that Deplete the Ozone Layer on 1 September 1993, the London Amendment, the Copenhagen Amendment and the Montreal Amendment on 11 August 2003 and the Beijing Amendment on 11 October 2011 and is classified as a party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved $4,154,601 from the Multilateral Fund for the Implementation of the Montreal Protocol in accordance with Article 10 of the Protocol to enable Bosnia and Herzegovina to achieve compliance with the Protocol,

1. That Bosnia and Herzegovina reported annual consumption for the controlled substances in Annex C, group I (hydrochlorofluorocarbons), for 2013 of 5.13 ODP-tonnes, which exceeds the party's maximum allowable consumption of 4.7 ODP-tonnes for those controlled substances for that year, and was therefore in non-compliance with the consumption control measures under the Protocol for hydrochlorofluorocarbons;

2. To note with appreciation the submission by Bosnia and Herzegovina of a plan of action to ensure its return to compliance with the Protocol's hydrochlorofluorocarbon consumption control measures in 2014 and subsequent years;

3. To note also with appreciation that the party submitted an explanation for its non-compliance, which confirmed that it had introduced a comprehensive set of measures necessary to ensure future compliance;

4. That the party's submission of ozone-depleting-substance data for 2014 showed that Bosnia and Herzegovina was in compliance with its hydrochlorofluorocarbon consumption obligations under the control measures of the Protocol;

5. That no further action is necessary in view of the party's return to compliance with the hydrochlorofluorocarbon phase-out in 2014 and its implementation of regulatory and administrative measures to ensure compliance with the Protocol's control measures for hydrochlorofluorocarbons for subsequent years;

6. To monitor closely the party's progress with regard to the implementation of its obligations under the Protocol;

Decision XXVII/11: Non-compliance with the Montreal Protocol by Libya

Noting that Libya ratified the Montreal Protocol on Substances that Deplete the Ozone Layer on 11 July 1990, the London Amendment on 12 July 2001, the Copenhagen Amendment on 24 September 2004 and the Montreal Amendment and Beijing Amendment on 15 April 2014 and is classified as a party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved $6,502,199 from the Multilateral Fund for the Implementation of the Montreal Protocol in accordance with Article 10 of the Protocol to enable Libya to achieve compliance with the Protocol,

1. That the annual consumption reported by Libya of the controlled substances in Annex C, group I (hydrochlorofluorocarbons), of 144.0 ODP-tonnes for 2013 and 122.4 ODP-tonnes for 2014 exceeds the party's maximum allowable consumption of 118.38 ODP-tonnes for those controlled substances for those years and that the party was therefore in non-compliance with the consumption control measures under the Protocol for hydrochlorofluorocarbons,

2. To note with appreciation the submission by Libya of a plan of action to ensure its return to compliance with the Protocol's hydrochlorofluorocarbon control measures under which, without prejudice to the operation of the financial mechanism of the Protocol, Libya specifically commits itself:

(a) To reducing its consumption of hydrochlorofluorocarbons from 122.4 ODP-tonnes in 2014 to no greater than:

(i) 122.3 ODP-tonnes in 2015;

(ii) 118.4 ODP-tonnes in 2016 and 2017;

(iii) 106.5 ODP-tonnes in 2018 and 2019;

(iv) 76.95 ODP-tonnes in 2020 and 2021;

(v) Levels allowed under the Montreal Protocol in 2022 and subsequent years;

(b) To monitoring the enforcement of its system for licensing imports and exports of ozone-depleting substances;

(c) To imposing a ban on the procurement of air-conditioning equipment containing hydrochlorofluorocarbons in the near future and to considering a ban on the import of such equipment;

3. To urge Libya to work with the relevant implementing agencies to implement its plan of action to phase out the consumption of hydrochlorofluorocarbons;

4. To monitor closely the progress of Libya with regard to the implementation of its plan of action and the phase-out of hydrochlorofluorocarbons. To the degree that the party is working towards and meeting the specific Protocol control measures it should continue to be treated in the same manner as a party in good standing. In that regard, Libya should continue to receive international assistance to enable it to meet those commitments in accordance with item A of the indicative list of measures that may be taken by the Meeting of the Parties in respect of non-compliance;

5. To caution Libya, in accordance with item B of the indicative list of measures that may be taken by the Meeting of the Parties in respect of non-compliance, that, in the event that Libya fails to return to compliance, the parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of hydrochlorofluorocarbons that are the subject of non-compliance is ceased so that exporting parties are not contributing to a continuing situation of non-compliance;

Decision XXVII/12: Membership of the Implementation Committee

1. To note with appreciation the work carried out by the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol in 2015;

2. To confirm the positions of Bosnia and Herzegovina, Cuba, Mali, Pakistan and the United Kingdom of Great Britain and Northern Ireland (replacing Italy) as members of the Committee for one further year and to select Bangladesh, Canada, Haiti, Kenya and Romania as members of the Committee for a two-year period beginning on 1 January 2016;

3. To note the selection of Mr. Iftikhar ul Hassan Shah (Pakistan) to serve as President and of Ms. Nancy Seymour (Canada) to serve as Vice-President and Rapporteur of the Committee for one year beginning on 1 January 2016;

Decision XXVII/13: Membership of the Executive Committee of the Multilateral Fund

1. To note with appreciation the work carried out by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol with the assistance of the Fund secretariat in 2015;

2. To endorse the selection of Austria, Belgium, Canada, Germany, Japan, the Russian Federation and the United States of America as members of the Executive Committee representing parties not operating under paragraph 1 of Article 5 of the Protocol and the selection of Argentina, Cameroon, China, Egypt, India, Jordan and Mexico as members representing parties operating under that paragraph for one year beginning 1 January 2016;

3. To note the selection of Mr. Agustin Sanchez (Mexico) to serve as Chair and Mr. Paul Krajnik (Austria) to serve as Vice-Chair of the Executive Committee for one year beginning 1 January 2016;

Decision XXVII/14: Co-Chairs of the Open-ended Working Group of the Parties to the Montreal Protocol

To endorse the selection of Mr. Paul Krajnik (Austria) and Mr. Leslie Smith (Grenada) as Co-Chairs of the Open-ended Working Group of the Parties to the Montreal Protocol in 2016;

Decision XXVII/15: Changes in the membership of the Scientific Assessment Panel

1. To thank the following scientific experts who have served as Co-Chairs of the Scientific Assessment Panel for their long and outstanding efforts on behalf of the Montreal Protocol:

(a) Mr. Ayite-Lo Ajavon (Togo);

(b) Mr. A.R. Ravishankara (United States of America);

2. To endorse the appointment of the following new Co-Chairs of the Scientific Assessment Panel:

(a) Mr. Bonfils Safari (Rwanda);

(b) Mr. David Fahey (United States of America);

Decision XXVII/16: Technology and Economic Assessment Panel organizational and membership changes

1. To thank the Technology and Economic Assessment Panel for its outstanding reports and to thank the individual members of the Panel for their outstanding service and dedication;

2. To thank Mr. Masaaki Yamabe (Japan) for his long and outstanding efforts on behalf of the Montreal Protocol on Substances that Deplete the Ozone Layer as Senior Expert of the Technology and Economic Assessment Panel;

3. To endorse the appointment of Mr. Marco Gonzalez (Costa Rica) and Ms. Suely Carvalho (Brazil) as Senior Experts for a two-year and a four-year term, respectively;

4. To thank Mr. Lambert Kuijpers (the Netherlands) for his long and outstanding efforts on behalf of the Montreal Protocol as Co-Chair of the Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee;

5. To thank Mr. Paul Ashford (United Kingdom of Great Britain and Northern Ireland) and Mr. Miguel Quintero (Colombia) for their long and outstanding efforts on behalf of the Montreal Protocol as Co-Chairs of the Flexible and Rigid Foams Technical Options Committee;

6. To thank Mr. Ashley Woodcock (United Kingdom) and Mr. Jose Pons Pons (Bolivarian Republic of Venezuela) for their long and outstanding efforts on behalf of the Montreal Protocol as Co-Chairs of the Medical Technical Options Committee;

7. To encourage the outgoing Co-Chairs of the relevant technical options committees to provide support to the new Co-Chairs to ensure a smooth transition;

8. To disband the Chemicals Technical Options Committee and the Medical Technical Options Committee and to establish a new technical options committee to be called the Medical and Chemicals Technical Options Committee;

9. To endorse the appointment of Ms. Helen Tope (Australia) as Co-Chair of the Medical and Chemicals Technical Options Committee for a term of two years;

10. To endorse the appointment of Mr. Keiichi Ohnishi (Japan) and Mr. Jianjun Zhang (China) as Co-Chairs of the Medical and Chemicals Technical Options Committee for a term of four years;

Decision XXVII/17: Ensuring the continuation of the work of the Technology and Economic Assessment Panel, its technical options committees, the Scientific Assessment Panel and the Environmental Effects Assessment Panel

Noting with appreciation the excellent work conducted by the assessment panels at the request of the parties,

Noting the concerns expressed by the Technology and Economic Assessment Panel in the September 2015 addendum to its June 2015 progress report[4] in relation to funding issues for some experts from parties not operating under paragraph 1 of Article 5,

Recalling that the members of the assessment panels and their subsidiary bodies provide their expertise and work on a voluntary basis,

Recalling also decision XVIII/5, in which the Meeting of the Parties encouraged parties, non-parties and other stakeholders to contribute financially and with other means to assist members of the three assessment panels and their subsidiary bodies for their continued participation in the assessment activities under the Protocol,

Recalling further that nominations of experts to the Technology and Economic Assessment Panel and its technical options committees are made in accordance with the terms of reference of the Technology and Economic Assessment Panel,

Noting the existence of the means to receive voluntary contributions, separate from the trust funds for the Montreal Protocol on Substances that Deplete the Ozone Layer and the Vienna Convention for the Protection of the Ozone Layer but managed by the Ozone Secretariat, for providing financial support for activities additional to those covered by the Vienna Convention and the Montreal Protocol trust funds;

1. To maintain the current financial support available for members of the assessment panels and their subsidiary bodies from parties operating under paragraph 1 of Article 5;

2. To request parties not operating under paragraph 1 of Article 5 that nominate experts to the assessment panels and their subsidiary bodies through their national focal points to obtain assurances or otherwise be satisfied that the nominated experts will be able to carry out their duties, including attendance at relevant meetings;

3. To invite parties to make voluntary contributions for the purpose of providing financial support, where necessary, to members of the assessment panels and their subsidiary bodies from parties not operating under paragraph 1 of Article 5 in order to support their attendance at relevant meetings;

[4] http://conf.montreal-protocol.org/meeting/mop/mop-27/presession/Background%20Documents%20are%20available%20in%20English%20only/Addendum_TEAP_Progress_Report_June_2015%20final.pdf.

4. That the provision of the support referred to in the preceding paragraph does not detract from the responsibility of a nominating party not operating under paragraph 1 of Article 5 to obtain assurances or otherwise be satisfied that experts that they nominate have sufficient support to carry out their duties, including attendance at relevant meetings;

5. To request the Ozone Secretariat to reinstitute administrative and organizational support for the work of the Technology and Economic Assessment Panel in order to reduce the administrative burden on assessment panel members where possible;

Decision XXVII/18: Financial report and budget of the trust fund of the Montreal Protocol

Recalling decision XXVI/21 on the financial report and budget for the Montreal Protocol,

Taking note of the financial report on the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer for the year ended 31 December 2014,[5]

Recognizing that voluntary contributions are an essential complement for the effective implementation of the Montreal Protocol,

Noting with concern that the scheduling of unbudgeted meetings may have serious implications for the fund balance,

Welcoming the continued efficient management by the Secretariat of the finances of the Trust Fund for the Montreal Protocol,

1. To approve the revised 2015 budget in the amount of $6,363,557 and the 2016 budget of $6,772,162, as set out in annex I to the report of the Twenty-Seventh Meeting of the Parties to the Montreal Protocol;[6]

2. To authorize the Secretariat to draw down the amounts of $2,086,624 in 2015 and $2,495,229 in 2016;

3. To approve, as a consequence of the drawdowns referred to in paragraph 2 of the present decision, total contributions to be paid by the parties of $4,276,933 for 2015 and $4,276,933 for 2016, as set out in annex II to the report of the Twenty-Seventh Meeting of the Parties and to note the ongoing unsustainable depletion of the fund balance and the implications for further drawdowns after 2016;

4. To request the Secretariat to prepare scenarios for the trust fund budget, its fund balance and reserves as well as the level of contributions that may need to be paid by the parties in the near future to ensure a fund balance adequate to allow the continued work of the Montreal Protocol and present them in time for consideration by the Open-ended Working Group at its the thirty-seventh meeting;[7]

5. That the contributions of individual parties for 2016 shall be listed in annex II to the report of the Twenty-Seventh Meeting of the Parties;

6. To reaffirm a working capital reserve at a level of 15 per cent of the annual budget to be used to meet the final expenditures under the Trust Fund;

7. To note with concern that a number of parties have not paid their contribution for prior years and to urge those parties to pay both their outstanding contributions and their future contributions promptly and in full, particularly given that the fund balance has been significantly depleted;

8. To request the Executive Secretary and to invite the President of the Meeting of the Parties to enter into discussions with any party whose contributions are outstanding for two or more years with a view to finding a way forward and to request the Executive Secretary to report to the Twenty-eighth Meeting of the Parties on the outcome of the discussions;

[5] UNEP/OzL.Pro.27/4/Add. 1.

[6] UNEP/OzL.Pro.27/13

[7] This reference to the thirty-seventh meeting of the Open-ended Working Group should be understood to refer to an appropriate meeting of the Open-ended Working Group in 2016.

9. To further consider how to address outstanding contributions to the trust fund at its next meeting and to request the Executive Secretary to continue to publish and regularly update information on the status of contributions to the Protocol's trust funds;

10. To request the Secretariat to provide, within the budget approved for 2016, administrative and organizational support to the Technical and Economic Assessment Panel;

11. Also to request the Secretariat to ensure the full utilization of programme support costs available to it in 2016 and later years and where possible to offset those costs against the administrative components of the approved budget;

12. To encourage parties to provide additional voluntary contributions to the trust fund entitled "Support of the Activities of the Ozone Secretariat" for any unbudgeted meetings;

13. In addition to the funds allocated from the core budget to cover the travel costs of representatives of parties operating under paragraph 1 of Article 5, to encourage parties to contribute to the trust fund entitled "Support of the Activities of the Ozone Secretariat" with a view to ensuring the full and effective participation of parties operating under paragraph 1 of Article 5 in the Meeting of the Parties and the Open-ended Working Group;

14. To request the Secretariat to indicate in future financial reports of the Trust Fund for the Montreal Protocol the amounts of cash on hand in the section entitled "Total reserves and fund balances" in addition to contributions that have not yet been received.

XI. Adoption of the report

179. The parties adopted the present report on Saturday, 6 November 2015, on the basis of the draft report set out in documents UNEP/OzL.Pro.27/L.1 and Add.1.

XII. Closure of the meeting

180. The Twenty-Seventh Meeting of the Parties to the Montreal Protocol was declared closed at 2.40 am on Saturday, 6 November 2015.

Annex I

Trust fund for the Montreal Protocol on substances that deplete the Ozone Layer

Approved revised 2015, approved 2016 and proposed 2017 budgets (in United States dollars)

Cost category		*Work months*	*Revised 2015*	*2016*	*Proposed 2017*
Professional and higher category					
1101	Executive Secretary (D-2) (shared with the Vienna Convention (VC))	6	131 200	149 450	148 200
1102	Deputy Executive Secretary (D-1)	12	250 000	272 700	280 881
1103	Senior Legal Officer (P-5)	12	214 801	226 245	227 900
1104	Senior Scientific Affairs Officer (P-5) (shared with VC)	6	–	128 000	128 000
1106	Programme Officer (Data and Information Systems) (P-4)	12	182 094	187 557	194 000
1108	Programme Officer (Monitoring and Compliance) (P-4)	12	256 428	246 700	270 101
Subtotal			**1 034 523**	**1 210 652**	**1 249 082**
Administrative support					
1301	Administrative Assistant (G-7) (shared with VC)	6	28 000	30 700	33 535
1302	Administrative Assistant (G-6)	12	42 000	44 100	46 305
1304	Programme Assistant (G-6) (shared with VC)	6	20 230	22 342	24 559
1305	Research Information Assistant (G-6) (shared with VC)	6	22 260	–	–
1306	Information Management Assistant (G-6)	12	37 703	44 100	46 305
1307	Computer Information Systems Assistant (G-7)	12	54 590	57 320	60 186
1320	Temporary assistance		29 780	33 980	23 100
Subtotal			**234 563**	**232 542**	**233 990**
Component total: Employee salaries, allowances and benefits			**1 269 086**	**1 443 194**	**1 483 072**
Consultants					
1201	Assistance in data reporting, analysis and promotion of implementation of the Protocol		84 500	85 000	85 000
Component total: Non-employee compensation and allowances			**84 500**	**85 000**	**85 000**
Expendable equipment					
4101	Miscellaneous expendables		18 000	18 000	18 000
Subtotal			**18 000**	**18 000**	**18 000**
Non-expendable equipment					
4201	Personal computers and accessories		5 000	5 000	5 000
4202	Portable computers		5 000	5 000	5 000
4203	Other office equipment (server, scanner, furniture, etc.)		5 000	5 000	5 000
4204	Photocopiers		5 000	5 000	5 000
4205	Equipment and peripherals for paperless meetings		5 000	5 000	5 000
Subtotal			**25 000**	**25 000**	**25 000**
Rental of premises					
4301	Rental of office premises		41 870	41 870	41 870
Subtotal			**41 870**	**41 870**	**41 870**
Operational and maintenance of equipment					
5101	Maintenance of equipment and others		20 000	20 000	20 000
Subtotal			**20 000**	**20 000**	**20 000**

Cost category		*Work months*	*Revised 2015*	*2016*	*Proposed 2017*
Reporting costs					
5201	Reporting		65 000	65 000	50 000
5202	Reporting (assessment panels)		5 000	5 000	5 000
5203	Reporting (Protocol awareness)		5 000	5 000	5 000
Subtotal			**75 000**	**75 000**	**60 000**
Sundry					
5301	Communications		10 000	10 000	10 000
5302	Freight charges		10 000	10 000	10 000
5303	Training		10 000	10 000	10 000
5304	Others (International Ozone Day)		10 000	10 000	15 000
Subtotal			**40 000**	**40 000**	**45 000**
Component total: Supplies and consumables			**219 870**	**219 870**	**209 870**
Travel on official business					
1601	Staff travel on official business		210 000	210 000	210 000
1602	Conference Services staff travel on official business		15 000	15 000	15 000
Component total: Travel on official business			**225 000**	**225 000**	**225 000**
Meeting costs					
1321	Conference services costs: Open-ended Working Group meetings		578 307	600 000	676 000
1322	Conference services costs: preparatory meetings and meetings of the parties		513 034	625 000	489 250
1323	Communication costs of A-5 assessment panel members and organizational costs of meetings		70 000	70 000	70 000
1324	Conference services costs: Bureau meetings		20 000	25 000	25 000
1325	Conference services costs: Implementation Committee meetings		115 600	125 000	125 000
1326	Conference services costs: Montreal Protocol informal consultation meetings		10 000	10 000	10 000
1330	Conference servicing costs of two-day workshop on HFC management back to back with a three-day Open-ended Working Group meeting		576 069	–	–
1331	Conference services costs: intersessional meetings		20 000	–	–
1332	Conference services costs: resumed thirty-sixth meeting of the Open-ended Working Group		200 000	–	–
1333	Conference services costs - Additional five-day OEWG meeting and two-day back to back extraordinary MOP			800 000	
Subtotal			**2 103 010**	**2 255 000**	**1 395 250**
Travel of Article 5 parties					
3301	Travel of Article 5 parties: assessment panel meetings		450 000	450 000	450 000
3302	Travel of Article 5 parties: preparatory meetings and meetings of the parties		350 000	375 000	375 000
3303	Travel of Article 5 parties: Open-ended Working Group meetings		300 000	325 000	325 000
3304	Travel of Article 5 parties: Bureau meetings		20 000	20 000	20 000
3305	Travel of Article 5 parties: Implementation Committee meetings		125 000	125 000	125 000
3306	Travel of Article 5 parties: consultations in an informal meeting		10 000	10 000	10 000
3309	Travel of Article 5 parties to the two-day workshop on HFC management back to back with a three-day Open-ended Working Group meeting		300 000	–	–
3310	Travel of Article 5 parties to the intersessional meeting		40 000	–	–

Cost category		*Work months*	*Revised 2015*	*2016*	*Proposed 2017*
3311	Travel of Article 5 parties to the resumed thirty-sixth meeting of the Open-ended Working Group		110 000	–	–
3312	Travel of Article 5 parties - Additional five-day OEWG meeting back to back with two-day extraordinary MOP			435 000	
Subtotal			**1 705 000**	**1 740 000**	**1 305 000**
Hospitality					
5401	Hospitality		25 000	25 000	25 000
Subtotal			**25 000**	**25 000**	**25 000**
Component total: Operating expenses			**3 833 010**	**4 020 000**	**2 725 250**
Total direct costs			**5 631 466**	**5 993 064**	**4 728 192**
Programme support costs (13 per cent)			732 091	779 098	614 665
Grand total			**6 363 557**	**6 772 162**	**5 342 856**
Drawdown			2 086 624	2 495 229	1 065 923
Contribution from parties			4 276 933	4 276 933	4 276 933
Fund balance at 31 December 2014 $5,602,916			3 239 732	683 213	(168 315)
Operating reserve			954 534	1 015 824	801 428
Total fund balance and operating reserve			**4 194 266**	**1 699 037**	**633 114**

Explanatory notes for the approved budgets for 2015 and 2016 and the proposed budget for 2017 of the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer

Budget line	*Comment*
Professional and higher category 1101–1108	Indicative Professional-level salary costs applicable to the Nairobi duty station and trends in salary costs have been used for the budgets. Salary costs for staff at the Professional level consist of: (a) basic salaries; (b) post adjustment as determined and reviewed by the International Civil Service Commission of the United Nations throughout the year, based on the cost of living index of the Nairobi duty station; and (c) entitlements such as home leave travel, which is granted during alternate years, and education grant. The inflation rate used for 2016 and 2017 is 3 per cent, to take into account annual salary step increments as well as increments decided by the International Civil Service Commission The post of the Deputy Executive Secretary was filled internally effective February 2015. The proposed budgets for 2016 and 2017 represent full years' salary and emoluments at the D-1 level. The post of the Senior Scientific Affairs Officer became vacant as of February 2015. The post was reclassified at the P-5 level to update the duties in line with the current needs of the Montreal Protocol and has been renamed Senior Environmental Affairs Officer. The post is expected to be filled by the end of 2015. The post of Senior Administrative Officer at the P-5 level is funded through the programme support cost budget. The post of Communications and Information Officer at the P-3 level is funded from the Trust fund for the Vienna Convention.
Administrative support/personnel 1301–1320	Indicative General Service level salary costs applicable to the Nairobi duty station and trends in actual salary cost have been used for the budgets. The approved 2015 budget increased by 5 per cent compared with the 2014 budget to cater for normal step increments and inflation. In December 2014, however, the Secretariat of the United Nations announced an additional salary increase for all General Service staff effective November 2014. The 2015 budget therefore increased by $20,000; this was implemented after the budget was approved. The 2016–2017 budget proposals reflect trends in actual costs and a 5 per cent inflation rate taking into account annual salary step increments as well as revisions. The post of Senior Administrative Assistant (G-7), for which an upgrade to P-2 was approved by the parties in 2012, is funded through the programme support cost budget. The upgrade of the post has not yet been implemented. Two posts at the G-6 level, Programme Assistant and Meeting Services Assistant, are funded through the Trust fund for the Vienna Convention. The post of Research Assistant was vacated in June 2015 and is frozen with a view to any future restructuring of the Ozone Secretariat. The post of Team Assistant, which is funded from the programme support cost budget, was vacated in May 2015 and is frozen with a view to any future restructuring of the Ozone Secretariat.
Consultants 1201	In 2015 the budget was increased by $9,500, from $75,000 to $84,500, to reflect the actual cost of consultants to fill the needs of the Secretariat for research on meetings and facilitation of the workshop on HFC management. The proposed budget for 2016 would be increased by $500, to $85,000, and would be maintained at that level in 2017.
Supplies and consumables 4101, 4201–4205, 4301, 5101, 5201–5203, 5301-5304	The section includes expendable equipment, non-expendable equipment, rental of office premises, reporting costs, communication, freight, training and the costs of Ozone Day celebrations.
Reporting 5201	The 2015 budget was originally $20,000, which covered the cost of editing and translating correspondence and other official documents throughout the year. The cost of coverage of meetings by the International Institute for Sustainable Development (IISD), however, has been moved from the meeting cost budget line and correctly reflected in this budget line. The cost per meeting of IISD coverage is assumed to be $15,000. In 2015, the cost of IISD covering three meetings, including the workshop and the thirty-fifth meeting of the Open-ended Working Group in April, the thirty-sixth

Budget line	*Comment*
	meeting of the Open-ended Working Group in July and the twenty-seventh Meeting of the Parties in November, is $45,000. In 2016 the cost of IISD covering four meetings, including the thirty-seveth meeting of the Open-ended Working Group in July, the Twenty-Eight Meeting of the Parties and an additional five-day meeting of the Open-ended Working Group to be held back-to-back with an extraordinary Meeting of the Parties, will be $45,000. In 2017, the cost if IISD covering the Open-ended Working Group meeting and the Meeting of the Parties will be is $30,000. All other costs remain unchanged.
Travel on official business 1601–1602	Travel on official business for 2016 and 2017 is maintained at the 2015 level.
Operating expenses 1321-1331, 3301 to 3311 and 5401	This section includes meetings costs, travel of Article 5 participants and hospitality.
1321	Meeting costs (not including travel of Article 5 parties) The 2015 meeting costs have been increased as follows: $53,607 to cover the difference in cost associated with convening the thirty-sixth meeting of the Open-ended Working Group in Paris in July. The original budget was based on the costs of convening the meeting in Nairobi or Geneva;
1322	$48,334 to cover costs associated with conference services and staff travel to Dubai for the twenty-seventh Meeting of the Parties;
1330	$51,369 to cover the difference in cost associated with convening the workshop on HFC management and the thirty-fifth meeting of the Open-ended Working Group in Bangkok in April. The original budget was based on the cost of convening the meeting in Nairobi or Geneva; The increased costs in lines 1321, 1322 and 1330 are absorbed by the savings on post costs;
1331	$20,000 to cover the cost of the two-day intersessional informal meeting held in June in Vienna. The Open-ended Working Group, at its thirty-fifth meeting, held in Bangkok in April 2015, decided to convene the intersessional informal meeting;
1332	$200,000 to cover the cost of the resumed thirty-sixth meeting of the Open-ended Working Group held on 29 and 30 October 2015, back to back with the Twenty-Seventh Meeting of the Parties to be held in Dubai, United Arab Emirates, from 1 to 5 November 2015.
1321	For the proposed 2016 budgets: The budget for the Open-ended Working Group meeting is based on a comparison of estimates of five venues (Nairobi, Bangkok, Montreal, Paris and Vienna) and a reasonable average has been used;
1322	The proposed budget for the meetings of the parties is based on a comparison of estimates of six venues (Nairobi, Bangkok, Montreal, Paris, Kigali and Vienna) and a reasonable average has been used. Any additional costs arising from holding the meetings in other locations will be borne by the Governments hosting the meetings. In the event that the meetings are not hosted by Governments, the additional costs will be reflected in revised budgets that will be presented to the parties for approval;
1333	The budget for the additional five-day meeting of the Open-ended Working Group held back-to-back with a two-day extraordinary Meeting of the Parties is based on the 2016 budgeted cost of $600,000 for one OEWG meeting and the 2015 cost of a two-day back to back meeting in 2015 in Dubai of $200,000.
1321	For the 2017 proposed budgets:
1322	The 2017 budget is increased by 4 per cent compared with 2016 to cover inflationary costs;

Budget line	*Comment*
	In 2017, the cost of the meeting is shared with the Vienna Convention Trust Fund, which is currently budgeted at $252,000; hence the decrease in meeting costs to $489,250;
1324	One Bureau meeting is scheduled for each of the years 2016 and 2017, with provision for interpretation and document translation into the appropriate languages depending on the membership of the Bureau. The costs are increased by $5,000 to accommodate generally increased meeting costs
1325	The proposed budgets for Implementation Committee meetings in 2016 and 2017 have been increased by $9,400 over the 2015 figure to accommodate generally increased meeting costs;
5401	The hospitality cost covers receptions at the meetings of the Open-ended Working Group and the Meeting of the Parties;
	Necessary funds may be transferred from the conference servicing budget lines (1321–1326) should such services be required, either through individual consultancies or corporate contracts.
3301-3311	Travel of Article 5 participants
	The participation of representatives of parties operating under paragraph 1 of Article 5 in the various Montreal Protocol meetings is budgeted at $5,000 per representative per meeting using the most appropriate and advantageous economy-class fare and United Nations daily subsistence allowances.
3302-3303	The 2016 and 2017 amounts were increased to $375,000 and $325,000, respectively, as decided by the Twenty-Seventh Meeting of the Parties.
3310	The 2015 cost for travel of Article 5 party representatives is increased by $40,000 to cover costs associated with the intersessional informal meeting held in Vienna in June. The meeting was requested by the parties at the thirty-fifth meeting of the Open-ended Working Group; hence the cost was not included in the approved budget.
3311	The 2015 cost for travel of Article 5 party representatives increased by $110,000 to cover costs associated with the resumed thirty-sixth meeting of the Open-ended Working Group, held on 29 and 30 October 2015, back to back with the Twenty-Seventh Meeting of the Parties, held in Dubai, United Arab Emirates, from 1 to 5 November 2015.
3312	The 2016 cost of travel of Article 5 participants to the additional five-day meeting of the Open-ended Working Group held back-to-back with a two-day extraordinary Meeting of the Parties is based on the 2016 budgeted cost of $375,000 for one OEWG meeting plus an additional $60,000. The Secretariat confirms that no funds from the budget lines in this section have been used to cover travel of non-Article 5 parties.

Annex II

Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer

Scale of contributions by the parties for 2016 based on the United Nations scale of assessments

(General Assembly resolution A/67/502/Add.1 of 24 December 2012 with a maximum assessment rate of 22 per cent)

(United States dollars)

	Name of party	*United Nations scale of assessments for 2013–2015*	*Adjusted United Nations scale to exclude non-contributors*	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2015 and 2016 contributions by parties*
1	Afghanistan	0.005	0.000	0.000	0
2	Albania	0.010	0.000	0.000	0
3	Algeria	0.137	0.137	0.137	5 840
4	Andorra	0.008	0.000	0.000	0
5	Angola	0.010	0.000	0.000	0
6	Antigua and Barbuda	0.002	0.000	0.000	0
7	Argentina	0.432	0.432	0.431	18 416
8	Armenia	0.007	0.000	0.000	0
9	Australia	2.074	2.074	2.067	88 412
10	Austria	0.798	0.798	0.795	34 018
11	Azerbaijan	0.040	0.000	0.000	0
12	Bahamas	0.017	0.000	0.000	0
13	Bahrain	0.039	0.000	0.000	0
14	Bangladesh	0.010	0.000	0.000	0
15	Barbados	0.008	0.000	0.000	0
16	Belarus	0.056	0.000	0.000	0
17	Belgium	0.998	0.998	0.995	42 543
18	Belize	0.001	0.000	0.000	0
19	Benin	0.003	0.000	0.000	0
20	Bhutan	0.001	0.000	0.000	0
21	Bolivia (Plurinational State of)	0.009	0.000	0.000	0
22	Bosnia and Herzegovina	0.017	0.000	0.000	0
23	Botswana	0.017	0.000	0.000	0
24	Brazil	2.934	2.934	2.924	125 072
25	Brunei Darussalam	0.026	0.000	0.000	0
26	Bulgaria	0.047	0.000	0.000	0
27	Burkina Faso	0.003	0.000	0.000	0
28	Burundi	0.001	0.000	0.000	0
29	Cabo Verde	0.001	0.000	0.000	0
30	Cambodia	0.004	0.000	0.000	0
31	Cameroon	0.012	0.000	0.000	0
32	Canada	2.984	2.984	2.974	127 204
33	Central African Republic	0.001	0.000	0.000	0
34	Chad	0.002	0.000	0.000	0

	Name of party	*United Nations scale of assessments for 2013–2015*	*Adjusted United Nations scale to exclude non-contributors*	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2015 and 2016 contributions by parties*
35	Chile	0.334	0.334	0.333	14 238
36	China	5.148	5.148	5.131	219 452
37	Colombia	0.259	0.259	0.258	11 041
38	Comoros	0.001	0.000	0.000	0
39	Congo	0.005	0.000	0.000	0
40	Cook Islands	-	0.000	0.000	0
41	Costa Rica	0.038	0.000	0.000	0
42	Côte d' Ivoire	0.011	0.000	0.000	0
43	Croatia	0.126	0.126	0.126	5 371
44	Cuba	0.069	0.000	0.000	0
45	Cyprus	0.047	0.000	0.000	0
46	Czech Republic	0.386	0.386	0.385	16 455
47	Democratic People's Republic of Korea	0.006	0.000	0.000	0
48	Democratic Republic of the Congo	0.003	0.000	0.000	0
49	Denmark	0.675	0.675	0.673	28 774
50	Djibouti	0.001	0.000	0.000	0
51	Dominica	0.001	0.000	0.000	0
52	Dominican Republic	0.045	0.000	0.000	0
53	Ecuador	0.044	0.000	0.000	0
54	Egypt	0.134	0.134	0.134	5 712
55	El Salvador	0.016	0.000	0.000	0
56	Equatorial Guinea	0.010	0.000	0.000	0
57	Eritrea	0.001	0.000	0.000	0
58	Estonia	0.040	0.000	0.000	0
59	Ethiopia	0.010	0.000	0.000	0
60	European Union	2.500	2.500	2.492	106 572
61	Fiji	0.003	0.000	0.000	0
62	Finland	0.519	0.519	0.517	22 124
63	France	5.593	5.593	5.575	238 422
64	Gabon	0.020	0.000	0.000	0
65	Gambia	0.001	0.000	0.000	0
66	Georgia	0.007	0.000	0.000	0
67	Germany	7.141	7.141	7.118	304 411
68	Ghana	0.014	0.000	0.000	0
69	Greece	0.638	0.638	0.636	27 197
70	Grenada	0.001	0.000	0.000	0
71	Guatemala	0.027	0.000	0.000	0
72	Guinea	0.001	0.000	0.000	0
73	Guinea-Bissau	0.001	0.000	0.000	0
74	Guyana	0.001	0.000	0.000	0
75	Haiti	0.003	0.000	0.000	0
76	Holy See	0.001	0.000	0.000	0
77	Honduras	0.008	0.000	0.000	0
78	Hungary	0.266	0.266	0.265	11 339

	Name of party	*United Nations scale of assessments for 2013–2015*	*Adjusted United Nations scale to exclude non-contributors*	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2015 and 2016 contributions by parties*
79	Iceland	0.027	0.000	0.000	0
80	India	0.666	0.666	0.664	28 391
81	Indonesia	0.346	0.346	0.345	14 750
82	Iran (Islamic Republic of)	0.356	0.356	0.355	15 176
83	Iraq	0.068	0.000	0.000	0
84	Ireland	0.418	0.418	0.417	17 819
85	Israel	0.396	0.396	0.395	16 881
86	Italy	4.448	4.448	4.433	189 612
87	Jamaica	0.011	0.000	0.000	0
88	Japan	10.833	10.833	10.797	461 796
89	Jordan	0.022	0.000	0.000	0
90	Kazakhstan	0.121	0.121	0.121	5 158
91	Kenya	0.013	0.000	0.000	0
92	Kiribati	0.001	0.000	0.000	0
93	Kuwait	0.273	0.273	0.272	11 638
94	Kyrgyzstan	0.002	0.000	0.000	0
95	Lao People's Democratic Republic	0.002	0.000	0.000	0
96	Latvia	0.047	0.000	0.000	0
97	Lebanon	0.042	0.000	0.000	0
98	Lesotho	0.001	0.000	0.000	0
99	Liberia	0.001	0.000	0.000	0
100	Libya	0.142	0.142	0.142	6 053
101	Liechtenstein	0.009	0.000	0.000	0
102	Lithuania	0.073	0.000	0.000	0
103	Luxembourg	0.081	0.000	0.000	0
104	Madagascar	0.003	0.000	0.000	0
105	Malawi	0.002	0.000	0.000	0
106	Malaysia	0.281	0.281	0.280	11 979
107	Maldives	0.001	0.000	0.000	0
108	Mali	0.004	0.000	0.000	0
109	Malta	0.016	0.000	0.000	0
110	Marshall Islands	0.001	0.000	0.000	0
111	Mauritania	0.002	0.000	0.000	0
112	Mauritius	0.013	0.000	0.000	0
113	Mexico	1.842	1.842	1.836	78 522
114	Micronesia (Federated States of)	0.001	0.000	0.000	0
115	Monaco	0.012	0.000	0.000	0
116	Mongolia	0.003	0.000	0.000	0
117	Montenegro	0.005	0.000	0.000	0
118	Morocco	0.062	0.000	0.000	0
119	Mozambique	0.003	0.000	0.000	0
120	Myanmar	0.010	0.000	0.000	0
121	Namibia	0.010	0.000	0.000	0

	Name of party	*United Nations scale of assessments for 2013–2015*	*Adjusted United Nations scale to exclude non-contributors*	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2015 and 2016 contributions by parties*
122	Nauru	0.001	0.000	0.000	0
123	Nepal	0.006	0.000	0.000	0
124	Netherlands	1.654	1.654	1.649	70 508
125	New Zealand	0.253	0.253	0.252	10 785
126	Nicaragua	0.003	0.000	0.000	0
127	Niger	0.002	0.000	0.000	0
128	Nigeria	0.090	0.000	0.000	0
129	Niue	-	0.000	0.000	0
130	Norway	0.851	0.851	0.848	36 277
131	Oman	0.102	0.102	0.102	4 348
132	Pakistan	0.085	0.000	0.000	0
133	Palau	0.001	0.000	0.000	0
134	Panama	0.026	0.000	0.000	0
135	Papua New Guinea	0.004	0.000	0.000	0
136	Paraguay	0.010	0.000	0.000	0
137	Peru	0.117	0.117	0.117	4 988
138	Philippines	0.154	0.154	0.153	6 565
139	Poland	0.921	0.921	0.918	39 261
140	Portugal	0.474	0.474	0.472	20 206
141	Qatar	0.209	0.209	0.208	8 909
142	Republic of Korea	1.994	1.994	1.987	85 002
143	Republic of Moldova	0.003	0.000	0.000	0
144	Romania	0.226	0.226	0.225	9 634
145	Russian Federation	2.438	2.438	2.430	103 929
146	Rwanda	0.002	0.000	0.000	0
147	Saint Kitts and Nevis	0.001	0.000	0.000	0
148	Saint Lucia	0.001	0.000	0.000	0
149	Saint Vincent and the Grenadines	0.001	0.000	0.000	0
150	Samoa	0.001	0.000	0.000	0
151	San Marino	0.003	0.000	0.000	0
152	Sao Tome and Principe	0.001	0.000	0.000	0
153	Saudi Arabia	0.864	0.864	0.861	36 831
154	Senegal	0.006	0.000	0.000	0
155	Serbia	0.040	0.000	0.000	0
156	Seychelles	0.001	0.000	0.000	0
157	Sierra Leone	0.001	0.000	0.000	0
158	Singapore	0.384	0.384	0.383	16 369
159	Slovakia	0.171	0.171	0.170	7 290
160	Slovenia	0.100	0.000	0.000	0
161	Solomon Islands	0.001	0.000	0.000	0
162	Somalia	0.001	0.000	0.000	0
163	South Africa	0.372	0.372	0.371	15 858
164	South Sudan	0.004	0.000	0.000	0
165	Spain	2.973	2.973	2.963	126 735

	Name of party	*United Nations scale of assessments for 2013–2015*	*Adjusted United Nations scale to exclude non-contributors*	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2015 and 2016 contributions by parties*
166	Sri Lanka	0.025	0.000	0.000	0
167	Sudan	0.010	0.000	0.000	0
168	Suriname	0.004	0.000	0.000	0
169	Swaziland	0.003	0.000	0.000	0
170	Sweden	0.960	0.960	0.957	40 924
171	Switzerland	1.047	1.047	1.044	44 632
172	Syrian Arab Republic	0.036	0.000	0.000	0
173	Tajikistan	0.003	0.000	0.000	0
174	Thailand	0.239	0.239	0.238	10 188
175	The former Yugoslav Republic of Macedonia	0.008	0.000	0.000	0
176	Timor-Leste	0.002	0.000	0.000	0
177	Togo	0.001	0.000	0.000	0
178	Tonga	0.001	0.000	0.000	0
179	Trinidad and Tobago	0.044	0.000	0.000	0
180	Tunisia	0.036	0.000	0.000	0
181	Turkey	1.328	1.328	1.324	56 611
182	Turkmenistan	0.019	0.000	0.000	0
183	Tuvalu	0.001	0.000	0.000	0
184	Uganda	0.006	0.000	0.000	0
185	Ukraine	0.099	0.000	0.000	0
186	United Arab Emirates	0.595	0.595	0.593	25 364
187	United Kingdom of Great Britain and Northern Ireland	5.179	5.179	5.162	220 774
188	United Republic of Tanzania	0.009	0.000	0.000	0
189	United States of America	22.000	22.000	21.928	937 830
190	Uruguay	0.052	0.000	0.000	0
191	Uzbekistan	0.015	0.000	0.000	0
192	Vanuatu	0.001	0.000	0.000	0
193	Venezuela (Bolivarian Republic of)	0.627	0.627	0.625	26 728
194	Viet Nam	0.042	0.000	0.000	0
195	Yemen	0.010	0.000	0.000	0
196	Zambia	0.006	0.000	0.000	0
197	Zimbabwe	0.002	0.000	0.000	0
	Total	**102.501**	**100.330**	**100.000**	**4 276 933**

Annex III

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

I. Methyl Bromide Technical Options Committee presentation on methyl bromide critical-use nominations

1. Mr. Ian Porter, on behalf of the Technology and Economic Assessment Panel and the two other Co-Chairs of the Methyl Bromide Technical Options Committee, Mr. Mohammed Besri and Ms. Marta Pizano, presented information on the final recommendations on critical-use nominations and other issues.

2. In introducing the presentation, he reported that the global consumption of methyl bromide for controlled uses had fallen from 64,420 tonnes in 1991 to less than 2,000 tonnes in 2014 and that the requests for critical use exemptions in 2015 were for less than 400 tonnes. He also noted that the amount of methyl bromide used for quarantine and pre-shipment, exempt from control under the Protocol, was approximately 12,000 tonnes, eight times more than for controlled uses in 2014.

3. He then explained that critical-use requests for methyl bromide from non-article 5 parties had fallen from 17,000 tonnes in 2005 to 40 tonnes in 2017. Eight nominations had been received from four Article 5 parties for 2016, totalling 500 tonnes. Of those, six were for lesser amounts than applied for in 2015 and two were new nominations from the South Africa.

4. Stocks in non-Article 5 parties applying for critical-use exemptions had fallen from 10,400 tonnes in 2005 to less than 150 tonnes in 2014. Critical-use exemption recommendations had not been adjusted to account for stocks of methyl bromide, and Article 5 parties needed to report on stocks if applying for critical-use exemptions in 2016.

5. He then provided an overview of the final recommendations for critical-use exemptions for 11 nominations for pre-plant soil and structures and commodities uses from three non-Article 5 parties (Australia, Canada and the United States) that had nominated 38 tonnes for 2017 and four Article-5 parties (Argentina, China, Mexico and South Africa) that had nominated 497 tonnes for 2016.

6. For commodity uses three nominations totalling 81.6 tonnes had been assessed from two parties. No further information had been received from parties after the last session of the Open-ended Working Group and accordingly no changes had been made to the interim recommendations for those nominations, which were 3,240 tonnes for 2017 for dry cure pork in the United States, 5.462 tonnes for 2016 for mills in South Africa 68.60 tonnes for 2016 structures in South Africa.

7. For pre-plant soil uses eight nominations had been submitted; two non-Article 5 parties and three Article-5 Pprties had requested critical-use exemptions in amounts totalling 35.021 tonnes and 368 tonnes, respectively.

8. Of those, there was no change to the interim recommendations for the Australian (29.76 tonnes), Chinese (99.75 tonnes) and Mexican (84.957 tonnes) nominations.

9. The Canadian nomination for 5.261 tonnes for strawberry runners in 2017 was not recommended, as it was considered that the technical justification in the nomination did not meet the requirements 1 (b) (iii) of of decision IX/6 with regard to “appropriate effort”. Groundwater studies for a key alternative chloropicrin are still pending and no detailed research programme on alternatives is in place.

10. The revised nomination for the tomato sector from Argentina for 75 tonnes was reduced by a further 5 per cent as alternatives (including resistant plants, grafting and 1,3-D/Pic) are considered to be suitable. The Methyl Bromide Technial Options Committee considers that these alternatives can be rapidly adopted in the near future.

11. The revised nomination for the strawberry fruit sector from Argentina of 58 tonnes was recommended in full, as alternatives were either presently unsuitable for the nomination or not registered. The Methyl Bromide Technial Options Committee urges the party to provide more extensive information on the economics and infeasibility of alternatives in any future nomination.

12. He concluded the presentation by discussing key issues for the current round of nominations and explaining that any Article 5 party applying for critical-use exemptions in future years was required in accordance with decision EX-1/4 to provide an accounting framework identifying stocks of

methyl bromide (paragraph 9 (f)) and a national management strategy (paragraph 3 (e)). He also explained that the timelines shown each year in the Panel's final critical-use nomination report should be followed strictly to allow the Methyl Bromide Technial Options Committee time to fully assess nominations. The next nominations, he said, were required by 24 January 2016.

II. Technology and Economic Assessment Panel presentation on the decision XXVI/9 update task force report: additional information on alternatives to ozone-depleting substances

13. Ms. Bella Maranion, task force co-chair, started the presentation on the updated decision XXVI/9 task force report, outlining decision XXVI/9 and the composition of the task force. Where it concerned the response to decision XXVI/9, she said that the updated report built on previous reports to investigate the alternatives to and implications of avoiding high-GWP alternatives to ozone-depleting substances, considering updated information obtained in various ways. She also said that the limits on the availability of data for some sectors prevented the consideration of business-as-usual and mitigation scenarios. Where it related to the topics for the update that were discussed at the thirty-sixth meeting of the Open-ended Working Group, the updated report gave the status of many refrigerant alternatives for both Article 5 party and non-Article 5 party scenarios, studied longer manufacturing conversion periods and a later start in a mitigation (MIT-5) scenario and presented updated cost estimates for the various mitigation scenarios and a definition of high ambient temperature (HAT). Costs and benefits as well as market analysis and influences up to 2050 were considered but could not be further analysed due to a lack of time. Where it concerned HAT, some testing data were currently available, but data from a number of testing projects would not be available until the beginning of 2016. A comparison of the updated task force report with the June 2015 report showed that there was no reported change with regard to refrigerants and refrigeration and air-conditioning (RAC) equipment, that there were major changes in the RAC mitigation scenarios, including Article 5 party cost estimates, that a HAT definition was presented, that no changes had been observed regarding refrigerants in various subsectors in HAT regions and that nothing could be reported on HAT projects, since final reports had not been available when the updated report was finalized. For non-medical aerosols, new information was given for the cumulative emissions during the period 2015–2030, i.e., an estimate of about 360 Mt CO2-equivalent. No change could be reported for the foams, fire protection and solvents sectors.

14. Mr. Lambert Kuijpers, task force co-chair, then presented the new business-as-usual and mitigation demand scenarios provided in the updated report. Those revised RAC bottom-up scenarios included specific GWPs for specific fluids, as well as an average GWP of 300 for low-GWP refrigerant blends, different manufacturing conversion periods for non-Article 5 and Article 5 parties, as well as manufacturing conversions to commence in 2020 for all RAC subsectors in the MIT-3 scenario, to commence in 2020 for all RAC subsectors except for the stationary air-conditioning subsector in 2025 in the MIT-4 scenario, and manufacturing conversions to commence in 2025 for all RAC subsectors in the MIT-5 scenario. The 2015 quantities in the RAC demand scenarios had been cross-checked against current best HFC global production data estimates. In terms of overall climate impact, the total integrated high-GWP HFC demand in Article 5 parties for 2020–2030 was estimated at 16,000 Mt CO2 equivalent. under the business-as-usual scenario, at 6,500 Mt CO2 equivalent under MIT-3 (60 per cent reduction), 9,800 Mt CO2 equivalent under MIT-4 (40 per cent reduction) and 12,000 Mt CO2 equivalent under MIT-5 (25 per cent reduction). He also said that delaying (and extending) the conversion period for the dominant stationary air-conditioning sector significantly would increase the overall climate impact and that shifting the start of all RAC subsector conversions to 2025, as in MIT-5-,would result in a substantially increased climate impact extending far beyond 2030, in particular for Article 5 parties.

15. Mr. Kuijpers then presented many graphs for the RAC sector for non-Article 5 and Article 5 parties, starting the business-as-usual scenario. The non-Article 5 party business-as-usual scenario showed 50 -60 per cent growth between 2015 and 2030 while, for the same period, the Article 5 party business-as-usual scenario showed 300 per cent growth. The bottom-up estimated demand had been checked with a best guess for production data for the year 2015. Uncertainties owing to a lack of production data, economic growth assumptions, equipment parameters and other factors were significant if extrapolated to 2030. For demand, the stationary air-conditioning subsector was clearly the most important one over the entire period 2015–2030. He then presented the total demand under the MIT-3 and MIT-5 scenarios for non-Article 5 parties. The MIT-5 scenario delayed conversion and resulted in higher demand by 2030. Due to the early completion of conversion (2020, 2025) assumed for non-Article 5 parties, demand was significantly reduced by the year 2030 under both MIT-3 and MIT-5. Due to the economic growth assumed after 2015 in non-Article 5 parties, the difference

between MIT-3 and MIT-5 (with different starting dates) was not that large. He then showed the total demand under the MIT-3 and MIT-5 scenarios for Article 5 parties. The 5 year delay in the start of manufacturing conversion under the MIT-5 scenario resulted in a peak demand that was 60 per cent higher than in case of MIT-3; furthermore, the demand estimated under MIT-5 in 2030 was twice the demand under MIT-3. Again, stationary air-conditioning was the determining subsector, followed by commercial refrigeration. Where it related to manufacturing demand for Article 5 parties under MIT-3 and MIT-5, a number of comments were valid. Under the MIT-3 scenario, manufacturing was estimated to peak at 500 Mt CO_2-equivalent, while under MIT-5 it was expected to peak at about 750 Mt CO_2-equivalent about five years later. By 2030, manufacturing demand would decrease substantially under MIT-3, as a result of the use of low GWP refrigerants, to less than 10 per cent of peak demand. Under MIT-3 and MIT-5, servicing demand in Article 5 parties was more or less the same as for manufacturing. The MIT-5 peak did not occur until 2029 or 2030, and substantial demand would remain after 2030. MIT-5 servicing demand in 2030 was estimated to be three times larger than under MIT-3; the servicing tail under MIT-5 would decrease much more during the 2030–2040 period than before 2030. Again, the stationary air-conditioning subsector was the most important sector. He then showed two graphs on a slide, which showed the total demand under the MIT-3 and MIT-5 scenarios for conversion periods of 6, 8, 10 and 12 years. A 6-year conversion period resulted in a much faster decrease of the total demand under both MIT-3 and MIT-5, while a 12-year conversion period resulted in a very slow decrease in total demand in the 5–10 years after that conversion had started. The graphs showed clearly the importance of an early start and a rapid conversion.

16. Mr. Kuijpers then showed a detailed cost breakdown for manufacturing conversion under both MIT-3 and MIT-5, followed by a summary slide showing total costs ranging from $2.3 billion to $3.2 billion under MIT-3 and MIT-5, respectively, where the reduction from business as usual in GWP-weighted equivalents went from 60 per cent to 25 per cent, or from a remaining demand of 6,500 Mt CO2-equivalent to 12,000 Mt CO2-equivalent under the MIT-3 and MIT-5 scenario, respectively. With regard to current costs, the most aggressive mitigation scenario was the least expensive. The Technology and Economic Assessment Panel could refine the cost estimates with improved production data, equipment parameters and economic growth assumptions. With regard to servicing costs during 2020–2030, a minimum reduction in servicing amounts, achieved through improved practices, could be estimated for MIT-3, MIT-4 and MIT-5 for the period 2020–2030 at costs ranging from $200 million–$320 million under MIT-3 and MIT-5, respectively. Those servicing costs would have to be added to the manufacturing conversion cost estimates; a larger reduction in servicing costs might be possible but would require additional measures.

17. Mr. Roberto Peixoto, co-chair of the task force, then elaborated on the HAT definition. He said that there was no universal definition of HAT and that HAT countries and regions could be defined as those exceeding a specified number of hours or days per year with temperatures above a specified level. Industry defined temperature zones in that manner. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers provided one such definition (ASHRAE 162-2013), and he presented a slide showing the global temperature zones corresponding to it. Other climate zone definitions existed but had not been used in the updated report, and further study would be required. He said that systems were normally designed to operate acceptably in temperatures up to 43°C, but conditions in some countries required acceptable performance in temperatures up to 52°C. Regarding research on refrigerants for use in HAT regions, the Oak Ridge National Laboratory in the United States had recently published a report, and projects to test the performance of equipment using various refrigerants in high ambient temperatures were being undertaken by the Air-Conditioning, Heating and Refrigeration Institute, UNEP, UNIDO and a number of enterprises in HAT countries. Data from those projects would not be available until late 2015 or early 2016.

18. Mr. Peixoto concluded the presentation with a number of important observations. By 2030 under a business-as-usual scenario demand for high-GWP HFCs in non-Article 5 parties would grow by 50 per cent and by almost 300 per cent in Article 5 parties, particularly due to growth in the stationary air-conditioning and commercial refrigeration subsectors. Options for alternatives to ozone-depleting substances, particularly those with no or low global warming potential, continued to appear on the market across all sectors. Delaying and extending the manufacturing conversion period, especially for the dominant stationary air-conditiong sector, would significantly increase both the climate impact and the conversion cost. Continued and improved tracking of production and consumption of all alternatives across all sectors would improve future analysis, and three technical reports on HAT refrigerant testing would provide additional data to inform future assessments.

III. Presentation on the synthesis report for the 2014 quadrennial assessments

19. The synthesis report of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economics Assessments Panel was presented during the high-level segment of the meeting. The synthesis report was prepared from the material from the 2014 assessments of the three panels.

20. The overarching message was that within a century of the recognition of the harmful effects of ozone-depleting substances on the stratospheric ozone layer, the stratosphere would be restored to its former state and detrimental effects on human would be reversed. Specifically, the overall messages were as follows:

(a) Because the Montreal Protocol had protected the ozone layer, large increases in ultraviolet (UV) radiation had been prevented except near the poles. By preventing large increases in UV radiation the Protocol had protected human health, food production and natural ecosystems;

(b) Within a century of its recognition, ozone layer depletion would be reversed. The international response would have prevented several hundred million cases of skin cancer and tens of millions of cataracts;

(c) Many ozone-depleting substances were also potent greenhouse gases. By controlling ozone-depleting substances the Montreal Protocol had decreased emissions of this important class of greenhouse gases, in contrast to all other major greenhouse gases, emissions of which continued to increase;

(d) Some replacements for ozone-depleting substances were also potent greenhouse gases and so had potentially harmful effects on the Earth's climate. Scientific and technological advances, however, offered solutions, which if implemented could prevent the problem from becoming significant. The timeline for such progress was highlighted and the thirtieth anniversary of the Vienna Convention and the fortieth anniversary of the publication of the seminal paper by Professors Mario Molina and Sherwood Rowland were noted.

21. Further details of the findings were given. They included following major findings and highlights:

(a) Progress in technology had reduced the use of ozone-depleting substances and had beneficial side effects. It was noted, however, that while halon production had been phased out since 2010 fire protection in civil aviation remained an unresolved challenge. It was also noted that technological advances enabled movement away from ozone-depleting solvents and other industrial process chemicals;

(b) In response to the technological changes that had enabled reductions in ozone-depleting substance use, the amount of ozone-depleting substances in the atmosphere was decreasing from its maximum in the1990s. The amount of ozone-depleting substances was expected to continue to decrease with adherence to the Montreal Protocol;

(c) The reduction in atmospheric concentrations of ozone-depleting substances had prevented further depletion of the stratospheric ozone layer, and there were some small signs of recovery. It was noted that the global ozone layer had stabilized and was not getting worse, although it was still too early to state unequivocally that it was improving. It was noted that the Antarctic ozone hole had not worsened but did continue to occur every year, with its magnitude essentially unchanged over the past decade within expected year-to-year variability;

(d) The control of ozone depletion has prevented large increases in UV radiation in most parts of the globe. Damaging effects of ozone loss on human health and the environment have been minimized. Human health has been protected from the worst effects of ozone depletion. It was noted that the Montreal Protocol had limited increases in solar UV-B radiation in populous areas in the world. It was further noted that changes in lifestyle had increased UV exposure and consequently the background prevalence of skin cancers;

(e) An emerging connection between ozone layer depletion and climate was the introduction of the non-ozone depleting HFCs in place of ozone-depleting substances. It was noted that many HFCs were potent greenhouse gases and their potential influence on climate was a concern.

(f) With complete adherence, the levels of ozone-depleting substances should decrease by about .6 per cent per year during the rest of twenty-first century. In response to that decrease, the Arctic and the global ozone layer should return to benchmark 1980 levels around the middle of the

century, and somewhat later for the Antarctic ozone hole. As ozone-depleting substances declined, the evolution of the stratospheric ozone layer in the second half of the twenty-first century would depend largely on atmospheric abundances of carbon dioxide ($CO_{2)}$, nitrous oxide (N_2O) and methane (CH_4);

(g) Surface levels of UV radiation would decline with the recovery of the stratospheric ozone layer. As the ozone layer recovered, UV-B radiation over the Antarctic was expected to decrease, broadly back to the same levels as existed before the onset of ozone depletion. It was noted that predicting the effects of future changes in UV radiation was complicated by factors beyond just stratospheric ozone;

(h) The Mnotreal Protocol had delivered important co-benefits for the Earth's climate. In 2010, the decrease in annual ozone-depleting substance emissions under the Montreal Protocol was estimated to provide about five times the climate benefit of the annual emissions reduction targets for the first commitment period (2008–2012) of the Kyoto Protocol;

(i) Without a successful Montreal Protocol, today's world would have higher levels of ozone-depleting substances; greater ozone depletion; higher levels of UV radiation; and larger climate forcing caused by ozone-depleting substances. Ozone-hole-like depletions would have occurred in the future over large parts of the world and there would have been large increases in UV-B radiation;

(j) Looking beyond 2015, it was noted that if the Parties had failed to implement the Montreal Protocol, the consequences of ozone-depleting substance emissions would have continued through the coming decades. Without a successful Montreal Protocol, the climate effects from higher levels of ozone-depleting substances and from depletion of the ozone layer would have been large. UV-B radiation at the Earth's surface in the latter part of the twenty-first century would have reached levels far beyond anything experienced in human history, with major impacts on people and the environment;

(k) The destruction of banks of ozone-depleting substances was an option that would yield diminishing returns for accelerating ozone layer recovery;

(l) While HFCs were benign in respect of the ozone layer some were potent greenhouse gases, and continued increases in their use could lead to a significant negative climate impact. Future HFC emissions could be comparable with those of future CO_2 emissions by 2050;

(m) The essential principles of the Montreal Protocol that enabled its success were said to be commitment, as shown by universal ratification of the Protocol; consensus as a basic mode of operation; assistance to Article 5 parties; independent assessments of the state of knowledge; periodic updates of the assessments (especially by the Technology and Economic Assessment Panel) as requested by the parties; a functioning operating infrastructure as exemplified by the Multilateral Fund; and monitoring and compliance with the Protocol.