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**Open-ended Working Group of the Parties to
the Montreal Protocol on Substances that
Deplete the Ozone Layer
Thirty-second meeting
Bangkok, 23–27 July 2012**

**Draft report of the thirty-second meeting of the Open-ended
Working Group of the Parties to the Montreal Protocol on
Substances that Deplete the Ozone Layer****I. Opening of the meeting**

1. The thirty-second meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer was held at the United Nations Conference Centre in Bangkok from 23 to 27 July 2012. The meeting was co-chaired by Ms. Gudi Alkemade (Netherlands) and Mr. Gazi Odat (Jordan).
2. The meeting was opened at 10.15 a.m. on Monday, 23 July 2012, by Mr. Odat.
3. Mr. Marco González, Executive Secretary of the Ozone Secretariat, began by introducing two public service announcements created by the Secretariat to mark the twenty-fifth anniversary of the Montreal Protocol. The announcements were then shown.
4. Mr. Pongthep Jaru-ampornpan, Deputy Director General of the Department of Industrial works, Ministry of Industry of Thailand, then made an opening statement in which he extended a warm welcome to the meeting participants and described the Montreal Protocol as one of the most successful multilateral environmental agreements to date. He went on to outline Thailand's efforts to phase out ozone depleting substances as an early signatory of the Protocol, and he stressed the difficulties faced by parties operating under paragraph 1 of article 5 of the Protocol as they prepared to freeze consumption of hydrochlorofluorocarbons (HCFCs) in 2013. He expressed his country's disappointment that the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol had postponed approval of Thailand's HCFC phase-out management plan at its sixty-seventh meeting the previous week, and said that it would be extremely difficult to control HCFC consumption without the plan in place, reminding the representatives that Thailand was still recovering from a serious flood the previous year. He expressed appreciation for the generous support Thailand had received from the Government of Japan in support of its efforts to phase out HCFCs, as well as Japan's willingness to share its technological knowledge. He closed with a reminder of the need to pass on a better world to future generations and an expression of hope that the meeting would reach a successful conclusion.
5. The representative of the Secretariat and the co-chairs presented the representative of the Government of Thailand with a plaque commemorating the country's achievements in working to protect the ozone layer.
6. Mr. González then made an opening statement in which he noted that the meeting was taking place in the midst of preparations to celebrate the twenty-fifth anniversary of the Montreal Protocol. Reviewing the events leading up to the current moment, he recalled the Protocol's beginnings in the

questions posed by Dr. Sherwood Rowland and Dr. Mario Molina in the early 1970s on the impact of chlorofluorocarbons, and he traced their efforts to save the atmosphere in the face of skepticism, saying that their courage was an inspiration to all scientists. At his suggestion, the participants stood and observed a moment of silence as a tribute to Dr. Rowlands, who had died earlier in the year. He then described the global response to the work of Drs. Rowlands and Molina, including the signing of the Montreal Protocol, which had gone on to become perhaps the primary example of effective international cooperation. He drew attention to a number of current initiatives of relevance to the work under the Montreal Protocol, including a declaration by heads of State at the recent United Nations Conference on Sustainable Development in support of a gradual phase-down in the consumption and production of hydrofluorocarbons (HFCs). A proposal to subject HFCs to phase-down under the Protocol was on the agenda of the current meeting, along with recommendations by the Technology and Economic Assessment Panel on essential and critical use nominations and an assessment by the Panel of alternatives to ozone-depleting substances pursuant to decision XXIII/9; a review of the procedures and processes of the Technology and Economic Assessment Panel and its subsidiary bodies; the use of ozone-depleting substances on ships; and an evaluation of the Protocol's financial mechanism. As a final point, he noted that there remained 19 parties who had not yet completed the process of ratifying all amendments to the Protocol; he called on those parties to accelerate their ratification processes to avoid the application of trade sanctions that would come into effect on 1 January 2013, and he pledged the Secretariat's assistance in that effort. In closing, he reported that the Secretariat had prepared materials to help the parties mark the twenty-fifth anniversary of the Protocol and was launching a facebook page that day where visitors could post anniversary-related information. In June, the Secretariat had launched in Gothenburg, Sweden, a worldwide online video contest for young people on the importance of the ozone layer, and representatives were asked to encourage young people in their countries to take part. Parties planning to celebrate the anniversary were also asked to record their celebrations so that they could be included in a planned documentary marking the anniversary.

II. Organizational matters

A. Attendance

7. *[To be completed]*

B. Adoption of the agenda

8. The Working Group agreed to delete item 10 of the provisional agenda set out in document UNEP/OzL.Pro.WG.1/32/1, on adjustments to the Protocol, because no party had put forth a proposed adjustment for discussion. Subsequent items on the agenda as adopted would be renumbered accordingly. It also agreed to discuss under item 12 of the provisional agenda (item 11 of the agenda as adopted), "Other matters," a number of issues, including feedstock uses, funding of production facilities for HCFC phase-outs, implications of the outcome of the recently concluded United Nations Conference on Sustainable Development on implementation of the Montreal Protocol, emergence of new ozone-depleting substances identified in the Technology and Economic Assessment Panel's 2012 progress report, environmental consequences of continued HCFC production and by-production, discrepancies between reported imports and exports of ozone-depleting substances, maximizing climate benefits of projects funded by the Multilateral Fund and an update on the Bali Declaration on Transitioning to Low Global Warming Potential Alternatives to Ozone Depleting Substances, which had been adopted at the ninth meeting of the Conference of the Parties to the Vienna Convention on the Protection of the Ozone Layer and the Twenty-Third Meeting of the Parties to the Montreal Protocol.

9. The Working Group accordingly adopted the following agenda on the basis of the provisional agenda set out in document UNEP/OzL.Pro.WG.1/32/1:

1. Opening of the meeting.
2. Organizational matters:
 - (a) Adoption of the agenda;
 - (b) Organization of work.
3. 2012 progress report of the Technology and Economic Assessment Panel.
4. Issues related to exemptions from Article 2 of the Montreal Protocol:
 - (a) Nominations for essential-use exemptions for 2013 and 2014;

- (b) Nominations for critical-use exemptions for 2013 and 2014;
 - (c) Quarantine and pre-shipment issues (decision XXIII/5, paragraphs 5 to 7);
 - (d) Global laboratory and analytical use exemptions (decision XXIII/6, paragraphs 6 to 9);
 - (e) Process agents (decision XXIII/7, paragraphs 6 and 7).
5. Montreal Protocol treatment of ozone-depleting substances used to service ships (decision XXIII/11).
 6. Report by the Technology and Economic Assessment Panel on additional information on alternatives to ozone-depleting substances (decision XXIII/9).
 7. Performance and verification criteria related to the destruction of ozone-depleting substances (decision XXIII/12, paragraphs 2 and 3).
 8. Evaluation of the financial mechanism of the Montreal Protocol (decision XXII/2).
 9. Nomination and operational processes of the Technology and Economic Assessment Panel and its subsidiary bodies and any other administrative issues (decision XXIII/10).
 10. Proposed amendments to the Montreal Protocol.
 11. Other matters.
 12. Adoption of the report.
 13. Closure of the meeting.

C. Organization of work

10. The Working Group adopted a proposal on the organization of work presented by the Co-Chair, agreeing to establish such contact groups as it deemed necessary to accomplish its work.

III. 2012 progress report of the Technology and Economic Assessment Panel

11. Members of the Technology and Economic Assessment Panel made a presentation summarizing the main findings of the Panel's 2012 progress report. Co-chairs of the Panel's technical options committees summarized the findings of their committees as follows: Mr. Ashley Woodcock and Ms. Helen Tope (Medical Technical Options Committee); Mr. Biao Jiang and Mr. Ian Rae (Chemical Technical Options Committee); Mr. Paul Ashford (Foams Technical Options Committee); Mr. Daniel Verdonic (Halons Technical Options Committee); Mr. Mohamed Besri (Methyl Bromide Technical Options Committee); and Mr. Lambert Kuijpers (Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee). In conclusion, Mr. Stephen O. Anderson, co-chair of the Panel, summarized some organizational issues related to the Panel and the technical options committees. A summary of the presentation prepared by the presenters, is set out in annex [] to the present report.

12. A period of questions and answers followed the presentation. In addition, the members of the Panel said that they were available to discuss bilaterally questions specific to individual parties and any other issues that individual parties might wish to raise.

13. Several representatives spoke of the difficulties of technology selection, especially for parties operating under paragraph 1 of Article 5 of the Protocol. One representative said that with a number of key deadlines approaching, including the freeze on consumption of HCFCs commencing on 1 January 2013, considerable difficulty was still being experienced in identifying alternatives to HCFCs that were technologically proven, environmentally friendly, economically viable, energy efficient and safe, as well as having low global warming potential. Further guidance was needed from the Panel on that matter. Another representative said that a further challenge arose as countries moved beyond the application of single solutions to particular technological problems and attempted to apply multiple technologies to optimize solutions. Another representative said that countries with very hot climates faced problems in finding suitable alternatives in the air-conditioning and refrigeration sectors. The representative of the Panel said that those matters would be addressed under other agenda items.

14. One representative, speaking on behalf of a group of countries, asked whether accounting frameworks had been received from all parties, enabling the reports of the Panel to be based on

complete information. He also asked for assurance, in relation to the work of the Chemical Technical Options Committee, that the analysis of process agent uses was based only on the criteria presented in decision X/14 of the Meeting of the Parties to the Montreal Protocol. The representative of the Panel said that the Panel had used the accounting frameworks that had been provided by the Secretariat and that it had indeed based its work on process agents on the criteria presented in decision X/14. The representative speaking on behalf of a group of countries also questioned the assertion in the Panel's progress report that the environmental impact of emissions from feedstock uses of various chemicals, including carbon tetrachloride, 1,1,1-trichloroethane, chlorofluorocarbons (CFCs), HCFCs and methyl chloroform, was "minimal". Another representative of the Panel took note of that opinion. The representative of the group of countries also said that he would be submitting written questions to the Panel, asking that the answers to those questions be provided either in plenary or bilaterally. The representative of the Panel said that the Panel would provide responses to those questions.

15. Another representative asked what criteria were applied in evaluating essential-use nominations for metered-dose inhalers, especially with regard to salbutamol, given that virtually all laboratories used standardized procedures for evaluating such products and maintained registries of the alternatives that they used. He also asked what criteria were applied in evaluating critical-use nominations for methyl bromide for strawberry cultivation, saying that a number of viable alternatives existed. The representative of the Panel said that many countries, including parties operating under paragraph 1 of Article 5, were no longer using methyl bromide, while certain parties were still requesting critical use exemptions for strawberry cultivation, including some countries where sales of the chemical alternative methyl iodide had been suspended. Also, techniques of application, and hence efficacy, varied from country to country. Critical-use nominations were evaluated on an individual basis, taking such differences between countries into account.

16. One representative recalled decision XXIII/8, in which the parties requested the Panel to investigate and report to the Twenty-Fourth Meeting of the Parties on the discrepancy between estimated emissions of carbon tetrachloride based on reported production and consumption data and estimated emissions inferred from atmospheric measurements, asking whether further information would be added to that presented in the 2012 progress report prior to the Twenty-Fourth Meeting of the Parties. The representative of the Panel said that the Panel had actively sought the information presented after reviewing research demonstrating the presence of carbon tetrachloride in urban air. That did not, however, preclude the possibility that other information might become available, and if it did it would be presented to the Meeting of the Parties.

17. The representative also requested clarification on how the Panel and its Methyl Bromide Technical Options Committee applied the criterion of economic infeasibility of alternatives to critical-use nominations for methyl bromide. The representative of the Panel recalled that according to decision IX/6, which set forth the criteria and procedures for assessing methyl bromide use, a use of methyl bromide only qualified as "critical" if no technically and economically feasible alternatives or substitutes were available and acceptable to the user; on the basis of that requirement the Panel had noted in its report that evidence of the economic infeasibility of alternatives was required to support any further critical-use nominations.

18. In relation to the work of the Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee, one representative asked to what extent the information on new technologies and related matters was updated in consultation with producers and other representatives of industry. The representative of the Panel outlined the process by which information in the various sections of the progress report was updated by the lead authors in consultation with the members of each technical options committee, and he expressed confidence in the completeness and consistency of the report. In response to a query on the use of HFC-1234yf in the refrigeration and mobile air-conditioning sectors, he said that there was still uncertainty on such matters as price and market availability.

19. One representative, recalling decisions VII/34 and XXIII/10 on the need for geographical balance among the members of the Technology and Economic Assessment Panel and its subsidiary bodies, asked what actions were being taken to increase participation by experts from parties operating under paragraph 1 of Article 5. The representative of the Panel said that it was important to increase the participation of such experts, particularly as the choice of technology became an increasingly important consideration for those countries as the deadline for HCFC phase-out approached. He also noted that technologies in a number of sectors had been developed first in those countries, offering opportunities for South-North cooperation. He advised parties to consult the Ozone Secretariat website, which provided updated information on Panel vacancies, including information on required expertise.

20. One representative said that developing countries required further information on products entering international trade to enable them to avoid the import of substandard or mislabelled materials and items. The representative of the Panel said that such issues were not normally treated in the progress reports and that the Ozone Secretariat and the UNEP OzonAction programme were good sources of information on the matter.

21. The Working Group took note of the information presented by the Panel.

IV. Issues related to exemptions from Article 2 of the Montreal Protocol

A. Nominations for essential-use exemptions for 2013 and 2014

22. The Co-Chair, recalling the presentation made by the Technology and Economic Assessment Panel on essential-use exemptions for 2013 and 2014 as part of its presentation on the 2012 progress report (see chapter III of the present report), introduced the sub-item.

23. One representative expressed concern that some parties had not submitted their accounting frameworks and that there was a shortage of information on stockpiles of CFCs in the frameworks provided. Information on such stockpiles, he said, was essential for effective tracking of the use of CFCs in the manufacture of metered-dose inhalers and, with the deadline for the complete phase-out of those substances approaching, the parties concerned should endeavour to make it available. Another representative echoed those points, calling for bilateral discussions between those parties and the Medical Technical Options Committee.

24. The representative of the Russian Federation introduced a conference room paper setting out a draft decision that would authorize an essential-use exemption for the production and consumption of 95 tonnes of CFC-113 in 2013 for his country's aerospace industry. Responding to a request from one representative he said that his delegation could agree to amend the draft decision to include a reference to phasing out the use of CFC-113 by 2016. As to the suggestion by another representative that it should also specify the alternative substances currently under consideration, he said that it would be inappropriate to do so before the testing of those substances had been completed.

25. The Working Group agreed that interested parties should discuss the draft decision and report to the Working Group on the results of their discussions.

26. *[To be completed]*

B. Nominations for critical-use exemptions for 2013 and 2014

27. Three of the co-chairs of the Methyl Bromide Technical Options Committee, Ms. Michelle Marcotte, Ms. Marta Pizano and Mr. Ian Porter, provided a detailed presentation on the Committee's findings on the trends in critical uses of methyl bromide since 2005, critical-use nominations for 2014 and the revision of the handbook on critical-use nominations, as set out in the report of the Technology and Economic Assessment Panel. A summary of the presentation prepared by the presenters is set out in annex [] to the present report.

28. Following the presentation, several representatives commented that they agreed that the handbook on critical-use nominations should be revised in 2012 for consideration by the Twenty-Fourth Meeting of the Parties. One representative suggested that since regular updates were always needed, the Methyl Bromide Technical Options Committee should be able to revise the Handbook without seeking the explicit approval of the Meeting of the Parties for each revision.

29. The representative of the United States said that his country continued to make progress in reducing consumption of methyl bromide for critical uses, noting that its latest critical-use nomination represented a reduction of 96 per cent from its 2005 baseline. He cautioned, however, that the sudden withdrawal by the manufacturer of the alternative substance methyl iodide was posing significant problems for the continued phase-out of methyl bromide. The United States' critical-use nominations for 2013 and 2014 had been submitted, and evaluated by the Methyl Bromide Technical Options Committee, on the assumption that methyl iodide would continue to be available.

30. The United States' nominations for 2014 would therefore need to be reassessed at the national level, a process that was still under way, and he asked for clarification as to whether the Methyl Bromide Technical Options Committee would be able to reconsider the nominations. It was too late, for the 2013 exemptions to be revised, since they had been approved by the Twenty-Third Meeting of

the Parties. He suggested that his country's experience revealed a need for the parties to explore the question of how to deal with sudden changes in circumstances.

31. In response, Mr. Porter said that while he shared the concerns raised over the withdrawal of methyl iodide, there were a number of other alternatives that had recently become available. This, together with recent changes in regulations pertaining to all fumigants, made it difficult for the Methyl Bromide Technical Options Committee to assess the overall impact, but he assured the Working Group that the situation would be reviewed.

32. The representative of the European Union said that as the Union had been able to phase out consumption of methyl bromide for all uses he was concerned about the continued levels of critical-use nominations. He was pleased, however, to note the fall in their total volume, and especially applauded Japan for ending its own consumption of methyl bromide.

33. Responding to questions, Mr. Porter clarified that the Methyl Bromide Technical Options Committee was not able to take account of a Party's stocks of methyl bromide when assessing its critical-use nominations because the Committee had no mandate to do so. The Committee always took note of alternative substances and methods used by all Parties in phasing out methyl bromide use, but differences in climate, soil types and regulatory structures meant that some alternatives were not always applicable in specific countries. He also confirmed that minority views expressed by Committee members were always taken into account in the Committee's deliberations and its process of reaching decisions, either by consensus or compromise.

34. Ms. Marcotte clarified that there was no specific timetable for the receipt of information from Parties on changes in their regulatory processes and any research that they conducted to promote alternatives to methyl bromide. In general, information was submitted along with the critical-use nominations. In addition, as Committee members were always conducting their own research, the Committee had access to many sources of information.

35. The co-chairs of the Committee agreed to discuss any issues surrounding the critical-use nominations and recommendations with the Parties concerned.

C. Quarantine and pre-shipment issues (decision XXIII/5, paragraphs 5–7)

36. Ms. Marta Pizano, co-chair of the Methyl Bromide Technical Options Committee, provided a detailed presentation on the Committee's findings, in response to decision XXIII/5, on trends in the use of methyl bromide for quarantine and pre-shipment uses since 1999, the Committee's suggestions for procedures and methods for data collection, and information on the work of the International Plant Protection Convention on eliminating or reducing the use of methyl bromide for phytosanitary purposes. A summary of the presentation prepared by the presenter is set out in annex [] to the present report.

37. In the ensuing discussion, the representative of the European Union said that the presentation provided a good illustration of the challenges that lay ahead, with consumption of methyl bromide for quarantine and pre-shipment uses currently exceeding consumption for all other uses. He expressed concern that some parties' consumption for quarantine and pre-shipment uses was actually rising, and observed that the European Union had managed to phase out consumption of methyl bromide for all uses. He acknowledged that continued use of methyl bromide was still necessary in some circumstances, but said that solutions needed to be developed that avoided the creation of unjustified barriers to trade.

38. He introduced a conference room paper setting out a draft decision prepared by his delegation, which would request the Technology and Economic Assessment Panel to continue to collect and update information on quarantine and pre-shipment uses of methyl bromide; would invite parties to improve their data collection; and would request the Secretariat to post on its website examples of data collection forms used by parties and clarify the situations of parties reporting zero consumption for quarantine and pre-shipment uses or not reporting such consumption.

39. Several representatives expressed support for the draft decision, saying that they nevertheless wished to suggest a number of minor amendments. One representative said that the draft decision should highlight cost-related issues and should indicate that accurate information would allow parties to keep track of their quarantine and pre-shipment uses and help parties operating under paragraph 1 of Article 5 to assess the implications of such uses for their efforts to meet their phase-out obligations.

40. The Working Group agreed to establish a contact group, co-chaired by Augustin Sanchez (Mexico) and Ms. Alice Gaustad (Norway), to discuss the proposed draft decision further.

41. [To be completed]

D. Global laboratory and analytical use exemptions (decision XXIII/6, paragraphs 6–9)

42. The Co-Chair, recalling the presentation made by the Technology and Economic Assessment Panel on laboratory and analytical uses of ozone-depleting substances in response to decision XXIII/6 as part of its presentation on the 2012 progress report (see chapter III of the present report), introduced the sub-item. He recalled that by that decision the Meeting of the Parties had allowed parties operating under paragraph 1 of article 5 to continue, until 31 December 2014, to use 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 had requested such parties to continue their efforts to replace ozone-depleting substance used for such testing and to report annually on their use of carbon tetrachloride for such testing.

43. In the ensuing discussion one representative expressed appreciation for the updated information provided by the Panel on efforts to develop alternatives to ozone-depleting substances and encouraged parties operating under paragraph 1 of article 5 to provide the Secretariat with the information called for by decision XXIII/6, saying that it was needed to facilitate the Panel's work and to assist the parties in identifying alternatives. He also called for standard-setting bodies to revise existing standard methods that still called for the use of ozone-depleting substances.

44. The Working Group took note of the information presented.

E. Process agents (decision XXIII/7, paragraphs 6 and 7)

45. The Co-Chair, recalling the presentation made by the Technology and Economic Assessment Panel on process agents as part of its presentation on the 2012 progress report (see chapter III of the present report), introduced the sub-item. The Panel had reviewed five cases of process agent use and had provided information on the quantities of ozone-depleting substances used; on related emissions and possible measures to reduce them; and on the challenges faced in efforts to find suitable alternatives; and in the case of vinyl chloride monomer production had concluded that the use of carbon tetrachloride might be better characterized as a feedstock rather than process agent use. Its work on the subject may be found in volume 1 of its 2012 progress report (pages 24–28 and 34–36).

46. The Working Group took note of the information presented.

V. Montreal Protocol treatment of ozone-depleting substances used to service ships (decision XXIII/11)

47. Mr. Lambert Kuijpers, co-chair of the Technology and Economic Assessment Panel, gave a presentation on the Panel's assessment, in response to decision XXIII/11, of ozone-depleting substances used to service ships, covering such matters as ship types and regulations, refrigerants and refrigerant charges, and banks and emissions of ozone-depleting substances. A summary of the presentation prepared by the presenter is set out in annex [] to the present report.

48. Following the presentation the representative of the Secretariat outlined the information presented in the note on the subject prepared by the secretariat in response to decision XXIII/11 (UNEP/OzL.Pro.WG.1/32/3), as well as information submitted by parties in response to the decision on how they regulated and reported on ozone-depleting substances supplied for the purpose of servicing ships, on how they calculated consumption with regard to such substances, and cases in which they had supplied, imported or exported such substances (UNEP/OzL.Pro.WG.1/32/INF/4).

49. In the ensuing discussion several representatives expressed appreciation for the information provided, saying that it was a useful basis for further discussion on a complex and critical issue in need of urgent action. One representative stressed that it could have implications for national phase-out plans. Another urged parties to continue reporting on the matter, while another noted that some had yet to begin.

50. One representative requested clarification of the phrases "ozone-depleting substances used on board" and "servicing uses only" in document UNEP/OzL.Pro.WG.1/32/3. Another expressed a desire to participate in any discussions on the issue pertaining to fishing vessels and exclusive economic zones.

51. One representative, speaking on behalf of a group of countries, introduced a draft decision, saying that it set out a pragmatic approach that built on previous decisions and sought to promote consistency with other international organizations, the international law of the sea, the International

Convention for the Prevention of Pollution from Ships (MARPOL) and other instruments. Particular attention had been paid to ensuring that none of the proposed changes would affect the parties' HCFC baselines or phase-out obligations, so that they would not be led into non-compliance, and to respecting parties' domestic legislation. The draft decision, if adopted, would help to increase transparency. All ozone-depleting substances used for servicing ships would be counted as domestic consumption on the part of the port State, while substances provided to ships in amounts in excess of what was required for servicing would be treated as exports but not counted as consumption by flag States. It would also request the Technology and Economic Assessment Panel to provide and periodically update information on demand for ozone-depleting substance for use on board ships; on ozone-depleting substances used in the construction of ships and alternatives to such substances; and on quantities of ozone-depleting substances needed for ship servicing by each party for ships flying its flag.

52. The Working Group agreed to establish a contact group co-chaired by Ms. Marissa Gowrie (Trinidad and Tobago) and Mr. Philippe Chemouny (Canada), to discuss the draft decision, taking into account the discussion in plenary.

53. [To be completed]

VI. Report by the Technology and Economic Assessment Panel on additional information on alternatives to ozone-depleting substances (decision XXIII/9)

54. Introducing the sub-item, the Co-Chair recalled that in decision XXIII/9 the Twenty-Third Meeting of the Parties had requested the Technology and Economic Assessment Panel to prepare a report on alternatives to ozone-depleting substances for consideration by the Open-ended Working Group at its thirty-second meeting. In response the Panel had established a task force to prepare the report, which is set out in volume 2 of the Panel's 2012 progress report.

55. Members of the task force then gave a presentation outlining the report. Mr. Lambert Kuijpers spoke about the introduction, refrigerant banks for commercial refrigeration and air-conditioning, and stationary air-conditioning at high ambient temperatures; Mr. Roberto Peixoto described the technical, economic and environmental feasibility of options for refrigeration and air-conditioning; Mr. Daniel Colbourne discussed the cost of refrigerants; Mr. Miguel Quintero reported on foams; Mr. Daniel Verdonik spoke about the use of HCFCs and other substances for fire protection; and Mr. Keiichi Ohnishi reported on solvents. A summary of their presentation prepared by the presenters is set out in annex [] to the present report.

56. The Co-Chair then invited questions from the representatives, asking them to take up any very technical questions bilaterally with the members of the Panel and to wait until after the question and answer period to make any more general comments on the report.

57. Several representatives asked whether the newest alternatives had been considered, particularly for refrigeration equipment for use in high ambient temperatures, saying that alternatives were being developed and deployed quickly. Panel members responded that some new and emerging alternatives were not discussed in the report because little information was available on their composition, characteristics and cost. They also noted that there was no experience using some alternatives in parties operating under paragraph 1 of article 5 of the Protocol and said that it was difficult to obtain a global picture of the use of alternatives, as solutions were dependent on factors such as size of equipment, type of product and where the product was being applied. While a number of alternatives had been developed, the report did not attempt to provide a precise estimate of what was happening currently or what would happen over the next several years.

58. In response to questions from several representatives, it was noted that the method used to estimate banks of refrigerants was the same as the method described in the Panel's 2010 assessment report. Estimates were based on equipment data rather than consumption and production. Data was taken from accountancy reports for years up to 2010 and in some cases 2011, and the trend suggested by those data was extrapolated towards 2015. The estimates reflected the assumption that the 2013 freeze would not have a significant influence on banks, as well as a number of other assumptions that reduced the need to take into account leakage rates and servicing. Country data, such as GDP or purchasing power, were also important for developing a consistent global picture.

59. A number of representatives posed questions related to costs. The Panel member responding said in response that the task force had not considered the cost of whole products, but had instead attempted to break products down into their cost components and take into account all elements

relating to the choice of refrigerant. He also noted that it was difficult to determine whether the cost of a product would change over time and which factors would make it do so without knowing the product's market penetration rate.

60. Two representatives expressed the desire for more detail in the report, including on the sources of data, information calculation model and choice of parameters used by the Panel for all alternatives and subsectors. The Panel member responding explained that given the uncertainties associated with different regional parameters and variations in prices of materials from different suppliers, the task force had agreed to avoid providing very precise costs for precise product groups and technologies.

61. Several representatives asked why factors such as toxicity, water and waste disposal had not been taken into account in the evaluation of environmental feasibility. Panel members responded that the scope of the evaluation called for in decision XXIII/9 did not allow for the consideration of such factors.

62. One representative asked for information on how substances had been classified with regard to global warming potential. The responding Panel member explained that, generally, low-GWP corresponded to a rating of less than 300, moderate-GWP to 300–1,000 and high-GWP to greater than 1,000. The classification for the purposes of the report, however, was also relative, depending on the range of values in a given sector; thus in the foam sector, for instance, the global warming potential of all hydrocarbons was lower than 25.

63. Following the question and answer period, several representatives commented on the report of the task force, saying that it contained useful information on alternative technologies currently available or being developed, the growth of HFC use and banks as a result of the phase out of ozone-depleting substances, and costs. Several noted that alternatives were being developed at a rapid pace, however, and called for more information from the Panel on newer alternatives to help the parties prepare for the next stage of phase-out, with a particular view to the increased use of HFCs as HCFCs were phased out. Additional evaluation of the environmental feasibility of alternatives was also suggested, taking a broader range of factors into account, including climate.

64. A representative of a non-governmental organization said that over 50 million cars in Canada, China, the Philippines and other countries had been converted to hydrocarbon-based air-conditioning systems from systems that used HFCs and HCFCs. The Panel, he suggested, should take this important trend into account.

65. The representative of the United States said that her delegation was developing a draft decision that would request additional information on alternatives. Several representatives expressed interest, and it was agreed that interested parties would meet informally to discuss the draft decision.

66. *[To be completed]*

VII. Performance and verification criteria related to the destruction of ozone-depleting substances (decision XXIII/12, paragraphs 2 and 3)

67. Introducing the item, the Co-Chair recalled that, as explained in chapter 3.11 of its 2012 progress report, the Technology and Economic Assessment Panel had been unable to continue to investigate performance and verification criteria for the destruction and removal of ozone-depleting substances as requested in decision XXIII/12. There had nevertheless been some developments and the Panel would be reviewing the results of a project in Colombia on the incineration of CFC-11, CFC-12 and foam containing CFC-11, which had been approved by the Executive Committee of the Multilateral Fund at its meeting in April 2012.

68. One representative said that there was no need for the Panel to continue to report on the subject until it had new information. She also said that the results of the project in Colombia should be reviewed by the Chemicals Technical Options Committee. The representative of Colombia expressed the view that those results might provide a useful basis for the development of performance and verification criteria, and that the project should be regarded as the first of a series of trials.

69. Another representative said that his country had repeatedly sought guidance on how to destroy stocks of confiscated ozone-depleting substances, which included some blends, and he urged the Panel to provide that guidance without any further delay.

VIII. Evaluation of the financial mechanism of the Montreal Protocol (decision XXII/2)

70. Introducing the item, the Co-Chair recalled that the parties had decided, in decision XXII/2, to conduct an evaluation of the financial mechanism of the Montreal Protocol in accordance with the terms of reference set out in the annex to the decision. The final report of the company contracted by the Secretariat to conduct the evaluation, ICF International, was contained in document UNEP/OzL.Pro.WG.1/32/INF/5, and the executive summary in document UNEP/OzL.Pro.WG.1/32/4. The co-chairs of the steering panel appointed to guide the evaluation, consisting of eight parties, explained that the panel had held three meetings to assist the consultants and consider drafts of the evaluation report.

71. Mr. Mark Wagner of ICF International presented the main findings of the evaluation. He explained that it had been conducted through a mixture of desk research, including a quantitative analysis using the Multilateral Fund secretariat's project database, the consideration of submissions from parties and in-depth interviews conducted with parties and implementing agencies.

72. Between 1993 and 2011 projects funded by the Multilateral Fund had resulted in the phase-out of 256,153 ODP-tonnes of consumption and 192,628 ODP-tonnes of production, which slightly exceeded the targeted phase-outs. In addition to ozone layer benefits the phase-out had also yielded substantial climate benefits, eliminating an estimated 6,700 million tonnes of carbon dioxide equivalent over fifteen years. The Multilateral Fund had an excellent track record; every party operating under paragraph 1 of article 5 that had reported consumption of CFCs in 2010 had achieved total phase-out. Up to thirty countries, however, might need additional assistance to comply with the 2015 methyl bromide phase-out target, and delays in the finalization of stage I HCFC phase-out management plans could cause problems in the future.

73. In general the procedures of the Multilateral Fund were proving to be both effective and efficient, and there was little need for further revision, with the possible exception of monitoring and reporting practices, which could be further streamlined. Lessons that could be drawn from the experience of the Multilateral Fund included the need for a strong policy framework prior to phase-out; the ability of a country-driven approach to enable personnel in developing countries to gain capacity; the value of the decades of institutional knowledge and technical learning for future sectoral conversions; and the value of straightforward procedures for access to project funds, of transparent and collaborative business planning processes and of capacity-building and institutional strengthening.

74. The recommendations listed in the report included encouragement to parties operating under paragraph 1 of article 5 to submit their remaining stage I HCFC phase-out management plans and to begin implementing approved strategies as soon as possible; encouragement to the Executive Committee to approve project preparation funding for stage II HCFC phase-out management plans; and a ramping up of efforts to phase out methyl bromide. Given the complexity of HCFC phase-out management plans, reporting requirements should be streamlined and guidance improved. The future availability of funding for institutional strengthening should be considered, especially for low-volume-consuming countries, as should systematic tracking of technology transfer. Finally, the Multilateral Fund should be regarded as a model for other multilateral environmental agreements, and synergies between agreements on ozone, climate and persistent organic pollutants should be pursued.

75. All representatives who took the floor complimented the consultants for preparing a high-quality and comprehensive report. The report's main conclusions, that the Multilateral Fund was proving to be a highly effective instrument, with clear objectives and a clear linkage between design, funding and compliance, all contributing to the effective phase-out of ozone-depleting substances, were widely shared. A number of representatives highlighted the conclusion that compliance by parties operating under paragraph 1 of article 5 with their obligations under the Protocol depended on projects undertaken with support from the Fund. Several representatives, both from parties operating under that paragraph and parties not so operating, highlighted the importance of the institutional strengthening activities supported by the Fund.

76. Several representatives highlighted issues which they felt the report could usefully expand upon. One suggested that some sections had been excessively summarized and would benefit from further elaboration; this was particularly true of the section on lessons learned, which drew on more than twenty years of experience. Another felt that future evaluations should involve interviews with more parties to ensure that a diversity of views was reflected, and suggested that a contact group should be established to enable all parties to express their opinions regarding the current evaluation.

77. Some representatives expressed a degree of concern that the report discussed lessons for other multilateral environmental agreements, observing that the terms of reference for the evaluation

specified that lessons should be drawn from other agreements and institutions for the Multilateral Fund, but not the other way round. In particular, lessons should be drawn from the continuing dialogue between the Global Environment Facility and the Multilateral Fund. A member of the steering panel observed that early versions of the terms of reference had in fact specified drawing lessons for other agreements, rather than from them, and that perhaps that had caused confusion.

78. One representative expressed concern that encouraging synergies could be interpreted as a call for less funding in the future, refuting the idea that less funding would be necessary. Another representative expressed reservations regarding the recommendation that synergies between multilateral environmental agreements on ozone, climate and persistent organic pollutants should be pursued.

79. One representative expressed concern about the impact of the global economic and financial crisis for the future ability of parties to provide adequate funding to assist parties operating under paragraph 1 of article 5 to achieve HCFC phase-out and said that the issue should have been discussed in the report's analysis of strengths, weaknesses, opportunities and threats. Another representative said that it was paramount that parties not operating under paragraph 1 of article 5 should provide new, additional, predictable and stable resources to support phase-out activities by parties operating under that paragraph. Other representatives also spoke of a need for further funding, particularly for capacity-building activities, and one expressed concern over the decline in recent years of funding for institutional strengthening.

80. One representative said that the time spent recently by the Executive Committee of the Fund in developing guidelines posed challenges for parties operating under paragraph 1 of article 5 in implementing projects. To date the Committee had approved no projects for the phase-out of HCFC production, a situation that threatened to cause non-compliance.

81. A number of representatives said that the report should further address the concerns of low-volume-consuming countries and least developed countries with regard to funding and technology transfer, saying that they would welcome specific recommendations. A representative of a low-volume-consuming country expressed concern over what was described as a potential contradiction between the report's conclusions that funding had been sufficient, given those countries' high compliance rates, and that future funding for HCFC phase-out might not be adequate. Another representative said that the Multilateral Fund would need to provide assistance in the future for destruction activities.

82. In response to the comments made, Mr. Warner said that it was challenging to prepare a report that both rested on evidence and reflected all the views of various stakeholders. He also noted that the budget for the evaluation had been limited and that it was difficult to derive lessons from the financial mechanisms of hundreds of other environmental agreements and institutions.

83. Several representatives noted that the report was an independent evaluation conducted by an independent consultant, saying that it was not the job of the parties to redraft it. They also said that it would be up to the Meeting of the Parties to decide whether to endorse the recommendations contained in the report. Others suggested that some of the comments made by parties pertained to matters that fell outside the terms of reference for the evaluation. Some representatives suggested that the comments submitted could be reproduced in an annex to the report or in an information document for the Twenty-Fourth Meeting of the Parties.

84. Following the discussion, it was agreed that parties could submit comments on the report to the Consultant, either during the current meeting or in writing as soon as possible and in any event no later than 1 September 2012. The consultants would then review the comments and consider whether they could be incorporated in the body of the report or in an annex. Given the need to circulate the final version of the report in time for consideration by the Twenty-Fourth Meeting of the Parties, the consultants requested all parties to be as concise as possible with their comments and to include evidence where possible. The Executive Secretary thanked the consultants for agreeing to incorporate the comments as agreed, thus going beyond what was required of them by their terms of reference.

IX. Nomination and operational processes of the Technology and Economic Assessment Panel and its subsidiary bodies and any other administrative issues (decision XXIII/10)

85. Introducing the item, the Co-Chair recalled that by decision XXIII/10 the Meeting of the Parties had requested the Technology and Economic Assessment Panel to take a number of actions

designed to improve the operation of the Panel and the procedures for the nomination of experts to the Panel and its subsidiary bodies. Accordingly, the Panel had set up a task force to undertake a study of the relevant issues. The findings of the task force were contained in volume 3 of the 2012 progress report.

86. The co-chairs of the task force – Ms. Bella Marañon, Ms. Marta Pizano and Mr. Alistair McGlone – made a presentation to the Working Group summarizing the findings of the task force. A summary of the presentation prepared by the presenters is set out in annex [] to the present report.

87. Following the presentation, one representative asked for further details on how many members of the Panel and its subsidiary bodies there were from parties operating under paragraph 1 of Article 5 in each region. Mr. McGlone said that those figures could be found in the report and that he would discuss the matter with the representative. Another representative asked what could be done to increase the number of members from parties operating under paragraph 1 of Article 5. Ms. Marañon responded that the Panel was eager to identify solutions, noting that in addition to balanced representation there was a need for experts with relevant specialist knowledge and experience. Several suggestions had been made in the report of the task force to improve procedures for putting forward nominees to the Panel and its subsidiary bodies.

88. In the ensuing general discussion, representatives raised a number of issues requiring further consideration. A number of representatives, suggesting that the rules and procedures for nomination and appointment to the Panel and its subsidiary bodies lacked clarity and were not uniformly applied, said that the task force proposals represented a move towards a more standardized, transparent approach. One representative said that decision XXIII/10 made clear the role of the parties in the nomination and appointment process and suggested that that role needed to be more firmly reflected in some of the elements discussed in the report. Several representatives said there was a need for a continuing review of the membership, size and expertise of technical options committees to take into account their changing activities and workload; further work was needed on that aspect of the report.

89. Some representatives said that the matrices for the various technical options committees contained in the task force report should be harmonized in respect of format and type of information. One representative said that inclusion of information on the areas of expertise of committee members was of particular relevance, especially with regard to their knowledge of alternatives to ozone-depleting substances.

90. Several representatives said that the proposals in the report regarding recusal were timely and useful. One representative said that the guidelines on recusal should include the requirement for annual disclosure of financial interests. One representative said that representatives should bear in mind ethical issues when considering Panel recommendations and should refrain from commenting on issues of direct relevance to their parties. Some representatives said that the proposal to set up an ethics advisory body was innovative and of potential value, although one representative said that further clarification was needed on the role of such a body.

91. Regarding amendments to the terms of reference for the Panel, some representatives said that the task force proposals constituted a good starting point for further discussion.

92. The Working Group agreed to establish a contact group, chaired by Mr. Javier Camargo (Colombia) and Ms. Masami Fujimoto (Japan), to consider the issues further.

93. *[To be completed]*

X. Proposed amendments to the Montreal Protocol

94. *[To be completed]*

XI. Other matters

A. Discrepancies between reported export and import data

95. The representative of the European Union introduced a conference room paper containing a draft decision submitted by the European Union and Croatia on discrepancies between data reported to the Secretariat on imports and exports of ozone-depleting substances. He said that it aimed to reduce the burden of clarifying such discrepancies and would thereby help to identify potential illegal trade in ozone-depleting substances.

96. The draft decision recalled decision XVII/6, in which the Meeting of the Parties had requested parties exporting controlled substances to submit to the Secretariat information on the countries of

destination; requested the Secretariat to revise the data reporting format to include information on countries of origin of imported substances; urged parties to use the revised format expeditiously; requested the Secretariat to counter-check reported data on imports and exports and to inform the parties concerned of any discrepancies; and urged parties so informed to take action to clarify the reasons for the discrepancies and to take preventive action where necessary.

97. All representatives who took the floor expressed support for the aims of the proposal. One representative said that in recent years her country had put significant efforts into tackling the problem of illegal trade, including through a cross-checking mechanism to identify source countries for imports. Despite this, the country had been informed by the Secretariat that the imports that it reported receiving regularly exceeded exports to it reported by other parties. She said that this showed that the existing voluntary approach was not working, and she therefore agreed with the proposal to revise the data reporting format. Another representative expressed agreement that there were problems with the existing procedures, saying that his Government regularly observed significant differences between the information reported by the Customs authorities and that reported by the environment management authority.

98. Other representatives expressed some concern regarding the implications of the proposal for importers and exporters, and voiced a desire to explore the proposal further with its proponents.

99. The Working Group agreed to establish a contact group, chaired by Mr. Arumugam Duraisamy (India) and Mr. Federico San Martini (United States), to discuss the draft decision further.

100. *[To be completed]*

B. Funding for HCFC production facilities

101. The representative of India introduced a conference room paper setting forth a draft decision on funding of HCFC production facilities. Recalling decision XIX/6, in which the parties had agreed that funding available through the Multilateral Fund should be "stable and sufficient to meet the incremental costs of enabling Article 5 Parties to comply with the accelerated phase-out schedule [for HCFCs], both for production and consumption sectors", he said that it was clear that HCFC production plants should be eligible for support. Although almost five years had passed since adoption of decision XIX/6, the funding guidelines for the phase-out of HCFC production had still not been finalized. His proposal aimed to avoid any further delay.

102. All representatives who took the floor agreed that the issue was an important one. Some representatives supported the proposal, saying that the continued failure to fund HCFC production sector phase-out put at risk the ability of parties operating under paragraph 1 of article 5 to comply with the control schedules of the Protocol, including the HCFC production freeze set for January 2013.

103. Other representatives, however, expressed concern over the proposal, saying that its implications were not clear. Noting that the Executive Committee of the Multilateral Fund was already considering both draft guidelines for production sector phase-out and proposals for specific phase-out projects, they question the value of the proposal. They also suggested that the proposal might inject the parties into the work of the Executive Committee in a way that was not desirable.

104. The Working Group agreed that interested parties would discuss the matter informally and report to the Working Group on the outcome of their discussions.

105. *[To be completed]*

XII. Adoption of the report

106. *[To be completed]*

XIII. Closure of the meeting

107. *[To be completed]*