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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**

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 produced 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 the serious flooding of 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 (CFCs), 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-use 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 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 to them 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. The following parties to the Montreal Protocol were present: Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Cambodia, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Comoros, Cook Islands, Costa Rica, Croatia, Cuba, Cyprus, Czech Republic, Democratic People's Republic of Korea, Democratic Republic of the Congo, Denmark, Djibouti, Dominican Republic, Egypt, Estonia, Ethiopia, European Union, Fiji, Finland, France, Germany, Ghana, Grenada, Guinea, Guinea-Bissau, Haiti, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kenya, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Madagascar, Malawi, Malaysia, Maldives, Mali, Marshall Islands, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Nauru, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Palau, Panama, Philippines, Poland, Qatar, Russian Federation, Saint Lucia, Senegal, Serbia, Seychelles, Singapore, South Africa, South Sudan, Sri Lanka, Swaziland, Sweden, Switzerland, Tajikistan, Thailand, the Former Yugoslav Republic of Macedonia, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Turkmenistan, Uganda, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Uzbekistan, Viet Nam, Yemen, Zambia and Zimbabwe.

8. Observers from the following United Nations entities, organizations and specialized agencies were also present: Global Environment Facility, Multilateral Fund for the Implementation of the Montreal Protocol, United Nations Development Programme, United Nations Environment Programme, United Nations Industrial Development Organization and World Bank. Also in attendance were representatives of the Scientific Assessment Panel and Technology and Economic Assessment Panel of the Montreal Protocol.

9. Representatives of the following intergovernmental, non-governmental and industry bodies attended the meeting as observers: 3M Electronics, Acuity Enterprises, Alliance for Responsible Atmospheric Policy, Asahi Glass Co., Ltd., Assumption University, Australian Refrigeration Council Ltd., Birla Aircon International, Business Council for Sustainable Energy, California Citrus Quality Council, California Strawberry Commission, Chemtura Corporation, Chemplast Sanmar Limited, China Association of Fluorine and Silicone Industry, China Household Electrical Appliances Association, China Refrigeration and Air-Conditioning Industry Association, China State Institute of Pharmaceutical Industry, Crop Protection Coalition/Florida Fruit and Vegetable Association, Daikin

Industries Ltd., Dow AgroSciences LLC, DuPont, ECI International Co., Ltd., Emergent Ventures India, Environmental Investigation Agency, European Partnership for Energy and the Environment, Free Trade Company, GIZ Proklima, Green Cooling Association, Green Earth, Greenpeace International, Gujarat Fluorochemicals Limited, Honeywell, ICF International, Industrial Foams Pvt. Ltd., Industrial Technology Research Institute, Institute for Governance and Sustainable Development, Japan Fluorocarbon Manufacturers Association, Japan Industrial Conference for Ozone Layer and Climate Protection, Japan Refrigeration and Air Conditioning Industry Association, Jiangsu Kangtai Fluorine Chemical Co., Ltd., Jinhua Yonghe Fluorochemical Co., Ltd., Licensed Fumigators Association Malaysia, Mebrom NV, Myland Group, Natural Resources Defense Council, Navin Fluorine International Limited, Niflon Co., Ltd., Panasonic Corporation, Pollet Environmental Consulting, Princeton University, Refrigerants Australia, Refrigerant Reclaim Australia, SAIP Advanced Polyurethane Equipment, Shecco, SRF Limited, Technical Education and Skills Development Authority, Touchdown Consulting, TRICAL, Triton Container International Limited, World Customs Organization, Zhejiang Fluorescence Chemical Co., Ltd.

B. Adoption of the agenda

10. 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 combined ninth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the Twenty-Third Meeting of the Parties to the Montreal Protocol.

11. 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

12. 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

13. 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 II to the present report.

14. 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.

15. 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.

16. 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 Chemicals Technical Options Committee, that the analysis of process agent uses was based only on the criteria presented in decision X/14 and subsequent related decisions 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 and subsequent related decisions. 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, 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.

17. 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.

18. 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.

19. 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.

20. 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 had been 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.

21. Two representatives, 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 North-South cooperation. He advised parties to consult the Ozone Secretariat website, which provided updated information on Panel vacancies, including information on required expertise.

22. 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.

23. 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

24. 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 section III of the present report), introduced the sub-item.

25. 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 the 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.
26. 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 in 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 and a decision on the alternative substances taken in the Russian Federation.
27. The Working Group agreed that interested parties should discuss the draft decision and report to the Working Group on the results of their discussions.
28. Following those discussions the Working Group agreed to forward the draft decision, as set out in section B of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.
29. The representative of China introduced another conference room paper, prepared by China and the Russian Federation, setting forth a draft decision on the 2013 essential-use nominations of the two parties relating to CFCs for metered-dose inhalers. The draft decision incorporated the quantities recommended by the Technology and Economic Assessment Panel for the Russian Federation but the quantity for China required further discussion.
30. The representative of the Russian Federation, noting that his country had for some time been importing CFCs from China, said that if the draft decision was adopted then the Executive Committee of the Multilateral Fund would need to consider adjusting China's approved production of CFC-11 and CFC-12 to permit it to meet the demand from the Russian Federation for 212 tonnes in early 2013.
31. One representative suggested that the draft decision should be amended to include, in square brackets, the 386.82 tonnes recommended by the Panel for China alongside the 395.82 requested. The Working Group agreed to the amendment.
32. The Working Group agreed to forward the draft decision, with the figures for requested and recommended exempt amounts enclosed in square brackets as set out in section A of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.

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

33. 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 II to the present report.
34. 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.
35. 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 critical-use nomination. 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.

36. The United States' nominations in some sectors for 2014 would therefore need to be reassessed at the national level, a process that was still under way, and he indicated that the Methyl Bromide Technical Options Committee would need to reconsider that part of the nominations for 2014 because of that change in circumstance. He further noted that the United States reserved its right to submit a supplemental critical-use nomination for 2014. He welcomed the recommendations of the Methyl Bromide Technical Options Committee on the critical-use nominations for facilities, walnuts and dates, which required no further consideration by the Committee. He suggested that his country's experience with the withdrawal of methyl iodide revealed a need for the parties to explore the question of how to deal with sudden changes in circumstances.

37. 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.

38. 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.

39. 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 it 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.

40. 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.

41. The Co-Chairs of the meeting encouraged parties to discuss any issues related to the critical-use nominations and the recommendations of the Methyl Bromide Technical Options Committee with the parties concerned and the Committee.

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

42. 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 II to the present report.

43. 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.

44. 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 provide annually an update of its report that summarized the data submitted under article 7 on a regional basis and analysed the trends in that data; would invite parties to improve their data collection, notably by using the elements identified by the Panel as essential; 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.

45. 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.

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

47. Subsequently, the co-chair of the contact group reported that the group had made considerable progress but finalization of the draft decision was dependent upon the outcomes of the upcoming forty-eighth meeting of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol. Consequently, the members of the contact group intended to work intersessionally to resolve outstanding issues prior to the Twenty-Fourth Meeting of the Parties to the Montreal Protocol.

48. The Working Group agreed to forward the draft decision, enclosed in its entirety in square brackets as set out in section C of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration, on the understanding that members of the contact group would continue to work to resolve outstanding issues before that meeting.

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

49. 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.

50. 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.

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

51. 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 a 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).

52. In relation to the work of the Chemicals Technical Options Committee, the representative of Colombia expressed appreciation for the progress report, in particular section 3.3.2.1 on quantities of ozone-depleting substances used as process agents reported in accordance with article 7 of the Protocol, and requested the revision of the 2010 carbon tetrachloride consumption figures for Colombia in the text of that section and in table 3-1, as they differed from the official data reported by Colombia.

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

53. 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 II to the present report.

54. 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).

55. 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.

56. 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.

57. 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 substances 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.

58. 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.

59. Following the deliberations of the contact group the Working Group agreed to forward the draft decision, enclosed in its entirety in square brackets as set out in section G of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration, on the understanding that members of the contact group would continue to work to resolve outstanding issues before that meeting.

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

60. 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.

61. 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 various cost aspects of refrigeration; 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 the presentation prepared by the presenters is set out in annex II to the present report.

62. 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.
63. 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.
64. 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.
65. 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.
66. 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 specific product groups and technologies.
67. 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.
68. 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.
69. 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.
70. 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 CFCs and HFCs. As well, thousands of stationary air-conditioners had been converted from HCFC-22 to hydrocarbons in many countries, including Jamaica, Malaysia, Thailand, the Philippines and Indonesia. The Panel, he suggested, should take these important trends into account.

71. 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 prior to its introduction in plenary.

72. Following informal discussions among the interested parties, the representative of the United States introduced the draft decision, which it had submitted in conjunction with Canada and Mexico. She said that the proponents felt that the 2012 progress report of the Technology and Economic Assessment Panel contained good information but also gaps, particularly with respect to new technologies and new alternatives, which the draft decision aimed to fill.

73. She went on to describe the draft decision, which requested the Panel to prepare a draft report for consideration by the Open-ended Working Group at its thirty-third meeting and a final report to be submitted to the Twenty-Fifth Meeting of the Parties. The report would identify and describe, for each sector and end-use, the efficacy of all low-global-warming-potential alternatives to HCFCs and CFCs, both currently deployed and expected to be available in specified future periods that reflected key implementation years for phase-out. The draft decision also called for analysis of the technical and economic feasibility of options and aimed to avoid increased use of high-GWP alternatives. It also requested additional information on alternatives suitable for use in high ambient temperatures, including how such temperatures might affect efficiency or other operational parameters, as well as an estimate of the proportion of high-GWP alternatives that could be avoided or eliminated. Parties in a position to do so were encouraged to provide data on current and historical annual production and consumption of individual HFCs and to promote policies and measures aimed at avoiding the selection of high-GWP alternatives in applications where there were alternatives that minimized impacts on the environment.

74. Two representatives expressed support for the proposal, saying that it reflected the questions and concerns expressed in earlier debate, and asked for an opportunity for further discussion.

75. One representative recalled that a similar proposal had been discussed at the Twenty-Third Meeting of the Parties and had resulted in decision XXIII/9, requesting the Technology and Economic Assessment Panel to prepare a report for consideration by the Open-ended Working Group at its thirty-second meeting, and said that he could support an update of that report provided that it respected the terms of decision XXIII/9. Another said that she did not support the proposal because the mandate was impractical, as the Panel's report made it clear that alternatives were still in the development stage and were not yet commercially available.

76. Taking into account the many questions and expressions of interest in further debate based on the outcome of the Panel's report, the Working Group agreed to form a contact group, co-chaired by Ms. Anne Gabriel (Australia) and Mr. Leslie Smith (Granada), to discuss the matter further.

77. Following the deliberations of the contact group the Working Group agreed to forward the draft decision, with certain text enclosed in square brackets as set out in section E of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.

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

78. 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.

79. 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.

80. 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.

81. The Working Group took note of the comments and the information presented.

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

82. 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 that 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 consultant and consider drafts of the evaluation report.

83. 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.

84. 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 30 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.

85. 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.

86. 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.

87. All representatives who took the floor complimented the consultant 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.

88. Several representatives highlighted issues that 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.

89. 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 around. 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.
90. 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.
91. One representative expressed concern about the impact of the global economic and financial crisis on 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.
92. 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.
93. 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.
94. In response to the comments made, Mr. Wagner 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.
95. 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.
96. Following the discussion, it was agreed that parties would submit comments on the final draft report in writing to the Secretariat, either during the current meeting or as soon as possible and in any event no later than 1 September 2012. The secretariat would send those comments to the consultant and would compile them for the information of the parties. The consultant would then review whether the comments related to the terms of reference and if so consider whether they could be addressed 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 consultant requested all parties to be as concise as possible with their comments and to include evidence where possible. The Executive Secretary thanked the consultant for agreeing to consider addressing 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)

97. 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 Panel's 2012 progress report.

98. The co-chairs of the task force – Ms. Bella Maranion, 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 II to the present report.

99. 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. Maranion 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 to improve procedures for putting forward nominees to the Panel and its subsidiary bodies.

100. 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 that 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.

101. 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. A number of representatives said that there was a need to enhance participation by parties operating under paragraph 1 of article 5 and to ensure geographical balance.

102. 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.

103. 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.

104. 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.

105. Subsequently, the representative of the United States introduced a conference room paper setting out a draft decision on the terms of reference, code of conduct and disclosure and conflict of interest guidelines for the Technology and Economic Assessment Panel and its technical options committees and temporary subsidiary bodies.

106. The Working Group agreed that the contact group previously established under the item would consider the draft decision.

107. Following the deliberations of the contact group the Working Group agreed to forward the draft decision, enclosed in its entirety in square brackets as set out in section F of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.

108. At the suggestion of the contact group the Working Group agreed to request the Technology and Economic Assessment Panel, in preparation for the Twenty-Fourth Meeting of the Parties, to undertake additional work to prepare a matrix of existing and needed expertise among the members of the Panel and its technical options committees; a proposal regarding the possible reorganization of the technical options committees, including their future size, needs and operating procedures; and clarification regarding the possible configuration and functions of a conflict resolution body.

X. Proposed amendments to the Montreal Protocol

109. The representatives of the United States of America, Canada and Mexico presented a proposal to amend the Montreal Protocol to include HFCs, contained in document UNEP/OzL.Pro.WG.1/32/6. They explained that the proposal was very similar to the proposal that they had made in 2011, but that the proposed phase-down schedule had been simplified and that by-product substances emitted from approved projects under the Clean Development Mechanism, as long as they continued to generate emissions reduction credits, would be exempted from the proposed controls.

110. They argued that the Montreal Protocol was the appropriate forum to deal with the topic, as HFCs were being introduced entirely as replacements for ozone-depleting substances, an unintended consequence of the remarkable success of the Protocol. Furthermore, HFC consumption was increasing very rapidly and was likely to continue to do so in the absence of signals to the market that it should develop and commercialize low-GWP alternatives suitable for all countries.

111. The Vienna Convention for the Protection of the Ozone Layer specified that parties should harmonize policies to limit adverse effects resulting from the phase-out of ozone-depleting substances, made it clear that it was legally possible to cover HFCs under the Montreal Protocol. In any case, the Executive Committee of the Multilateral Fund was already taking action to limit the climate impact of the phase-out of HCFCs, and no fewer than 128 parties operating under paragraph 1 of article 5 had already had phase I HCFC phase-out management plans approved.

112. In addition, over the three years during which the issue had been discussed, there had been significant progress in the development of cost-effective alternatives to HFCs, as illustrated in the 2012 progress report of the Technology and Economic Assessment Panel and in the conference on advancing ozone and climate protection technologies held just before the current meeting. There was also a much greater awareness of the issue and a much better understanding of concerns surrounding it. Many countries had expressed a desire to avoid developing a dependence on HFCs in their efforts to phase out HCFCs.

113. World leaders meeting at the United Nations Conference on Sustainable Development in June 2012 had recognized the urgency of the case. In paragraph 222 of the Conference outcome document they acknowledged that the phase-out of ozone-depleting substances was resulting in a rapid increase in the use and release of high global-warming potential HFCs to the environment and expressed support for a gradual phase-down in the consumption and production of HFCs. The explicit reference to the phase-down of consumption and production reinforced the arguments for the proposed amendment, which used exactly the same language. Similarly, the formation of the Climate and Clean Air Coalition, aimed at taking action on short-lived climate forcers, demonstrated widespread international support for the measure.

114. The institutions of the Montreal Protocol – the scientific and technology and economic assessment panels, the Multilateral Fund and its implementing agencies, and the parties, working together to develop national regulations – put the Protocol in a uniquely favourable position from which to address HFCs, and they obviated the need to start from scratch or duplicate those bodies elsewhere. The Protocol had proved to be an effective tool in phasing out ozone-depleting substances over the last twenty-five years, and could continue to be so for the joint aims of climate and ozone protection.

115. The proponents of the amendment acknowledged the views of parties who felt that HFCs would be better controlled under the United Nations Framework Convention on Climate Change, but said that nothing in the amendment would alter obligations under the climate regime and that the Montreal Protocol possessed the expertise and experience to make it a far more efficient forum in which to phase down HFCs, just as it was managing to phase down HCFCs.

116. In conclusion, they called on all parties to enter into a fruitful discussion and an open exchange of views. In response to a question, they clarified that the amendment proposed a phase-down rather than a total phase-out in recognition of the fact that alternatives did not yet exist for all uses. The proposals in the amendment for control measures adjusted by global warming potential would facilitate a transition from high-GWP substances through low-GWP alternatives, such as

hydrofluoroolefins (HFOs). In the future, as more alternatives developed, the Protocol's adjustment procedure could be used if parties agreed that the phase-down should be accelerated.

117. The representative of the Federated States of Micronesia also presented a proposed amendment to the Protocol, contained in document UNEP/OzL.Pro.WG.1/32/5. Rather than going through his proposal in detail, he drew attention, through the use of poetic allegory, to the dangers of over-consumption inherent in the current model of development. If all countries aimed to reach the consumption level of the so-called developed countries, he said, the world would require the resources of between five and nine earths, and the consequences would threaten the very survival of some countries, such as those located on small islands. Countries had to learn to use resources efficiently and to live within natural limits.

118. He recalled that, in effect, HFCs were born out of the Montreal Protocol, not out of the Framework Convention on Climate Change, and said that it would be irresponsible for parties to ignore that fact. Parties were faced with a clear choice: develop a global framework for the phase-down of HFCs, or accept the consequences of regulations developed in parties such as the United States or the European Union, which were already taking action to reduce HFC use.

119. In conclusion, he drew attention to the growing number of parties that were calling for action on HFCs and encouraged all parties to adopt a change in mindset, saying that the problem could not be solved by adopting the same mindset that had created it in the first place.

120. Many representatives welcomed the proposals and congratulated their proponents for their perseverance in raising the issue. Many drew attention to the growing emissions of HFCs and the increasingly severe impacts of climate change. Many representatives also highlighted the outcome of the Conference on Sustainable Development on HFCs, saying that it was an important new development and an imperative signal for action. Having discussed the issue for the last three years, the time was ripe for decision.

121. Other representatives, however, said that there was a need to avoid rushing to adopt new measures, particularly in the light of the current global economic crisis and given the fact that the first deadline for HCFC phase-out in parties operating under paragraph 1 of article 5 was in less than six months. Given the limited financial support available, the Montreal Protocol parties should give priority to their existing commitments rather than to creating new ones.

122. Several representatives expressed concern at the potential impact on parties operating under paragraph 1 of article 5 and called for greater clarity regarding the additional financial support that would be necessary. One representative recalled that at the Twenty-Third Meeting of the Parties, parties not operating under that paragraph had agreed to a replenishment of the Multilateral Fund at the lower end of the estimates of what was needed; given that lack of financial ambition, actions directly related to the scope of the Montreal Protocol, such as the phase-out of HCFCs, should be given priority.

123. Several representatives expressed concern over what they said was uncertainty regarding the technical and economic viability of potential non-HFC alternatives to HCFCs, particularly for parties operating under paragraph 1 of article 5. As the report of the Technology and Economic Assessment Panel had shown, replacements still did not exist for all HCFCs, including in particular HCFC-22. Such replacements as were available often suffered drawbacks such as flammability, toxicity or poor energy efficiency, which meant that they could make the problem of climate change worse, not better, and contribute to other environmental problems such as acid rain. Many alternatives could only be used in low-charge systems such as domestic or mobile air-conditioning and were not suitable for larger systems.

124. In response, one representative said that domestic and mobile air-conditioning accounted for a very significant proportion of current HCFC and HFC consumption and that major projects to convert to hydrocarbons were already under way in some parties operating under paragraph 1 of article 5.

125. One representative pointed to the fact that many companies were already commercializing low-GWP alternatives to ozone-depleting substances, demonstrating that there was currently no need to amend the Montreal Protocol; once new alternatives had become available for all uses, the issue of amending the Protocol could perhaps be considered. One representative responded that had such an approach been taken to the phase-out of CFCs, the Montreal Protocol would never have come into being: at the time the Protocol was adopted, alternatives to CFCs did not exist in all sectors.

126. Many other representatives pointed to the wide range of alternatives presented at the technology conference held before the current meeting of the Open-ended Working Group as evidence that an amendment was timely. The GWP-weighted phase-down process proposed in the amendment

allowed for the fact that alternatives were not currently available for all uses, and would act as a spur to new commercial developments – just as the Montreal Protocol had done in the case of CFCs and HCFCs. New regulation was needed to set the framework for innovation, create certainty for industry and maximize environmental benefits; the amendment was a fair and cost-effective proposal.

127. Some representatives said that HFCs should not be subject to the Montreal Protocol because they were not ozone-depleting substances and thereby fell outside its scope. Others said that the United Nations Conference on Sustainable Development outcome document did not specify any particular treaty under which action should be taken. The Framework Convention on Climate Change and its Kyoto Protocol should be regarded as the primary forum in which to tackle the issue, in line with the principle of common but differentiated responsibility – particularly as discussion of the second commitment period of the Kyoto Protocol was currently under way. As greenhouse gases covered by the Kyoto Protocol, HFCs should be addressed under that instrument by Annex I parties in accordance with their responsibilities. One representative regarded the amendments as an attempt, in effect, to merge the climate and ozone regimes, a step that could only be taken, if at all, at a joint meeting of the parties to both treaties.

128. Some representatives called for better coordination between the two regimes as an alternative way forward. Others observed that complementary approaches, such as the provision of additional funding for low-GWP alternatives to ozone-depleting substances, were possible and had already been adopted under the Montreal Protocol.

129. Other representatives, however, pointed out that the Kyoto Protocol controlled only emissions of HFCs, whereas the amendments proposed to control their production and consumption; the two approaches were entirely complementary and represented a coherent attempt to address the issue. In addition, the matter of whether it was possible to amend the Protocol to incorporate HFCs had been discussed at length at previous meetings and the legal justification had been set out clearly in the report of the Twenty-Third Meeting of the Parties. There were many precedents for actions aimed at mitigating climate change under the Montreal Protocol.

130. One representative added that under the terms of the Durban Platform of the Framework Convention a new climate treaty would not enter into force for another eight years at the earliest, and argued that the parties could not wait that long to take action on HFCs given the rapid increase in their production and consumption. The Montreal Protocol had established an efficient and effective regime that was well suited to controlling HFCs.

131. Some representatives called for parties not operating under paragraph 1 of article 5 to take voluntary action to discourage the use of HFCs through their own regulatory processes, in preference to amending the Montreal Protocol. In response, the representative of the European Union pointed to the policy goal, adopted in 2011, to reduce its non-carbon dioxide emissions by 70–80 per cent by 2050, as well as regulations governing HFCs applicable to all member States. The representative of Switzerland said that his country was in the process of revising its domestic regulations to restrict HFCs in the light of the growing availability of alternatives.

132. Some representatives expressed concern that subjecting HFCs to the Montreal Protocol could set a precedent for other non-ozone-depleting chemicals. Others, however, argued that the growth in HFC use was a direct consequence of the Montreal Protocol, and in particular of the phase-out of HCFCs, and that it would be irresponsible of the Protocol not to recognize and address that.

133. Many representatives suggested that a contact group should be established to allow for a full discussion of the proposed amendments and all related issues. Some added that many of the concerns that had been raised by critics of the proposal could only be discussed at length within a contact group, and that it was unfair of critics to block such a group's establishment. Since agreeing to the establishment of a contact group did not imply support for the specific proposals in the amendments, there was no reason to oppose it. Different formats or titles for the discussions were possible if the term "contact group" was unsatisfactory.

134. Other representatives objected, however, arguing that HFCs fell outside the scope of the Montreal Protocol and that a formal contact group therefore could not be established. Informal discussions could proceed between interested parties if they so wished.

135. Responding to the arguments, the proponents of the amendment proposed by the United States, Canada and Mexico highlighted the fact that many of the arguments raised by the critics of the proposal had been raised before and had been answered, in detail, in an information document circulated before the Twenty-Third Meeting of the Parties. The document, which they intended to update and re-circulate, had included information on the scientific, technical and economic aspects of

low-GWP alternatives to HCFC, and the technology conference held before the current meeting had underlined the extraordinarily dynamic state of technological innovation in the area.

136. The phase-down in the proposed amendment represented a gradual, step-by-step approach to reducing HFC use progressively as new alternatives became available. Furthermore, it was clear that the proposal did not aim to place an unfair burden on parties operating under paragraph 1 of article 5; parties not so operating would face a faster phase-down process, which would not be easy to achieve but was nevertheless necessary. They acknowledged the concerns of parties operating under paragraph 1 of article 5 about the need for additional funding, and pointed out that additional financial support was already available for low-GWP alternatives through the Multilateral Fund. If HFCs were added to the Protocol additional funding would need to be provided to assist with their phase-out. It would be useful to commission a study to estimate how much funding was likely to be necessary, but that had been blocked by critics of the proposal.

137. The arguments for including HFCs in the Montreal Protocol did not rest primarily on the success to date of the agreement, but on the fact that the Protocol was uniquely placed to tackle the issue, given its experience in phasing out substances in exactly the same sectors in which HFC use was expanding. In addition, as had been pointed out, HFC use was a direct consequence of the good work carried out under the Protocol. Furthermore, there was no reason not to consider climate objectives under the Protocol; they were already routinely taken into account, for example in many decisions of the Executive Committee of the Multilateral Fund.

138. The proposition that a particular class of substances could only be dealt with under one treaty was unjustified. There were many examples of treaties successfully working together on common problems, including HCFC use being addressed by the MARPOL Convention and methyl bromide use being addressed by the International Plant Protection Convention. Including HFCs in the Montreal Protocol would in no way undermine the climate regime; rather, it would reinforce it, helping to phase out an estimated 96 billion tonnes of carbon dioxide equivalent by 2050, with a very significant positive impact on the climate. It was difficult to understand why that should be regarded as objectionable.

139. In conclusion, and acknowledging the genuine concerns raised by parties about some features of the proposal, they said that they looked forward to discussing them further in a contact group.

140. The representative of the Federated States of Micronesia dismissed the arguments that HFCs could not be included in the Montreal Protocol, arguing that it was the parties to the Protocol that had the sole responsibility for interpreting its applicability. This was not only a legal possibility but a moral imperative. He recognized the genuine concerns regarding the technical and economic feasibility of alternatives to HFCs, and looked forward to discussing them in a contact group.

141. The representative of an environmental non-governmental organization recalled the exact wording of the Vienna Convention and the Montreal Protocol, which clearly indicated that the phase-out of ozone-depleting substances should not proceed in a vacuum, but with reference to all relevant scientific and environmental impacts, including in particular climatic effects. Blocking the establishment of a contact group and failing to act on HFC phase-down represented an abrogation of the obligations that all parties assumed when they ratified the Montreal Protocol and its amendments.

142. The representative of another environmental non-governmental organization highlighted the gathering evidence of serious climatic change and the present gap between the greenhouse gas emissions reductions needed to prevent runaway climate change and existing national commitments. The rapid phase-down of HFCs was one of the most readily available measures to protect the climate in the short term, and their use should be completely eliminated by 2020. He called on parties to support the amendments and to enact domestic measures to reduce HFC use. Should HFCs not be incorporated into the Montreal Protocol, the Meeting of the Parties and the Open-ended Working Group should meet every two years rather than annually.

143. The representative of an industry non-governmental organization from China said that the members of his organization had a good record in phasing out CFCs and that efforts were being made to phase out HCFCs. The failure of the Executive Committee of the Multilateral Fund to approve funding for HCFC production sector phase-out, however, was likely to cause them serious problems, and meant that the industry could not promise to meet the HCFC freeze scheduled for January 2013. Adding new restrictions on HFCs, which were potential alternatives to HCFCs, could only cause additional problems. Parties to the Montreal Protocol should afford a higher priority to assisting parties operating under paragraph 1 of article 5 than to phasing out HFCs.

144. Summing up the discussion, the co-chair proposed the formation of a contact group on a dialogue on possible actions by the Montreal Protocol to minimize the further introduction of high-GWP HFC alternatives related to phasing out HCFCs. The group could consider a broad range of issues, including the need for scientific information on trends in HFC use, the technical and economic feasibility of low-GWP alternatives, legal questions with regard to a possible extension of the Montreal Protocol, possible policies and procedures that could be adopted to minimize the introduction of high-GWP HFC alternatives to HCFCs, and financial and cost considerations.

145. The group's discussions would proceed without any prejudice to any possible outcome of discussions under any other relevant multilateral environmental agreement, including the Framework Convention on Climate Change. She emphasized that the proposed terms of reference for the group aimed at taking a step back from the specific provisions of the proposed amendments and facilitating discussion of the many related issues that parties had raised as matters of concern. In response to questions, she clarified that the ideal outcome of the discussions would be the identification of issues that could be taken forward under the Montreal Protocol for negotiation at a later stage. She suggested that all parties would benefit from a full exchange of views.

146. Some representatives objected to the proposal, saying that the matter was better dealt with under item 6 of the meeting's agenda, that the report of the Technology and Economic Assessment Panel already provided information on low-GWP alternatives, and that in the absence of clear alternatives to key uses of HCFCs there was little point in discussing the matter any further.

147. After further discussions, including informal consultations, the co-chair reported that despite the best efforts of all parties, it had not proved possible to reach consensus to establish a contact group. She thanked parties for the flexibility they had displayed and the constructive nature of the discussions.

148. Several representatives expressed disappointment at the outcome, indicating that the proposals had been properly introduced and fully explained and that many parties had expressed support for them. They said that the current stalemate on the issue was a missed opportunity to realize significant benefits for climate protection and that they looked forward to working with colleagues to advance the proposals at the Twenty-Fourth Meeting of the Parties. One representative expressed surprise at some parties' desire to pass the responsibility for dealing with HFCs to the Kyoto Protocol, given that it was the Montreal Protocol that had created the problems.

149. Several representatives said that they strongly opposed the proposed amendments and were equally disappointed that the proponents had repeatedly put them forward notwithstanding repeated objections to them on the grounds that they were outside the mandate of the Montreal Protocol.

150. Another representative said that the time might be approaching when the parties needed to consider proceeding through methods other than consensus. Responding to a question, the representative of the Secretariat confirmed that so far the Montreal Protocol had always taken decisions by consensus, saying that that had been an important reason for its success.

151. All representatives who took the floor thanked the co-chair for her hard work and constructive efforts in trying to find a way forward. The Working Group agreed to forward the proposed amendments, enclosed in square brackets to indicate a lack of agreement, to the Twenty-Fourth Meeting of the Parties for further consideration.

XI. Other matters

A. Discrepancies between reported export and import data

152. 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.

153. 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.

154. 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.

155. 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.

156. 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.

157. Following the deliberations of the contact group the Working Group agreed to forward the draft decision, with certain text enclosed in square brackets as set out in section M of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration. Parties were invited to submit comments to the proponents of the draft decision, by 30 September 2012, in preparation for the Twenty-Fourth Meeting of the Parties.

B. Funding for HCFC production facilities

158. 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 all agreed incremental costs to enable 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.

159. 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.

160. 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.

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

162. Following those discussions the Working Group agreed to forward the draft decision, as set out in section J of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.

C. Feedstock uses of ozone-depleting substances

163. The representative of the European Union introduced a conference-room paper setting out a draft decision on feedstock uses. He noted that quantities of ozone-depleting substances used for feedstock were currently over 1 million tonnes and were expected to grow, and there was a risk that significant amounts of ozone-depleting substances could be diverted to uses restricted under the Montreal Protocol.

164. He recalled that in its 2012 progress report the Panel had found that the use of carbon tetrachloride in the production of vinyl chloride monomer could be considered to be a feedstock use rather than a process agent use and that the parties had earlier, in decision XXIII/7, decided that such use would be considered to be a feedstock use, on an exceptional basis, until 31 December 2012.

165. He then gave a brief overview of the key provisions of the draft decision, which among other things would remind parties that reporting on quantities of ozone-depleting substances used as feedstock was obligatory under article 7 of the Montreal Protocol; call on them to refrain from

commissioning new production facilities using ozone-depleting substances as feedstock when alternatives were available; request them to identify processes in which ozone-depleting substances were used as feedstock in their territories and report them to the Ozone Secretariat along with information on any new alternatives to feedstock uses; and request them to consider introducing labelling requirements for ozone-depleting substance containers.

166. Representatives thanked the European Union for submitting the draft decision, several noting that a similar proposal had been considered the previous year. They expressed reservations regarding the proposal but said that they were willing to discuss the issues further. One said that countries operating under paragraph 1 of article 5 were working hard to phase out controlled uses of ozone-depleting substances and supervise feedstock use, and had little time or energy for the additional effort suggested in the draft decision.

167. One representative suggested that there should be no further discussion of the matter because feedstock uses were not controlled by the Montreal Protocol. Another representative said in response that it was appropriate to consider a draft decision about feedstock monitoring, labelling and reporting issues given that the Executive Committee of the Multilateral Fund had considered funding for a project to monitor and minimize emissions of carbon tetrachloride used as feedstock.

168. The Working Group agreed that the parties that had taken the floor would discuss the matter further and report to the Working Group on the outcome of their discussions.

169. Following those discussions the Working Group agreed to forward the draft decision, as set out in section D of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration. Parties were invited to submit comments to the proponent of the draft decision, by 30 September 2012, in preparation for the Twenty-Fourth Meeting of the Parties.

D. Maximizing climate benefits of projects funded by the Multilateral Fund

170. The representative of Switzerland introduced a conference room paper setting out a draft decision on the mobilization of financing from sources other than the Multilateral Fund for maximizing the climate benefits of the accelerated phase-out of HCFCs. The draft decision invoked decision XIX/6, which encouraged parties to select alternatives to HCFCs that minimized climate impacts and called on the Executive Committee of the Multilateral Fund to prioritize relevant, cost-effective projects and programmes. The proposal aimed to respond to comments made by some parties operating under paragraph 1 of article 5 at previous meetings to the effect that such climate impacts could already be addressed under the Fund, to the willingness of the Executive Committee to prioritize low-GWP alternatives to HCFCs to the extent permitted by its resources, and to some donor countries that had expressed an interest in providing additional funding earmarked for climate change mitigation.

171. The Executive Committee had previously considered a similar proposal but had been unable to reach a conclusion. The present draft decision therefore sought to simplify procedures by establishing a funding window for the provision of resources to supplement existing pledges to the Multilateral Fund. Those resources would be reserved for projects aiming to implement low-global-warming-potential alternatives to HCFCs that had been turned down on the grounds that their incremental costs exceeded the cost-effectiveness thresholds agreed by the Executive Committee. The draft decision provided ideas as to how the funding window might operate and was designed to garner comments and suggestions on such questions as eligibility for – and the collection and use of – emission-reduction credits.

172. In the ensuing discussion, a number of representatives said that they saw merit in aspects of the proposed draft decision but suggested that further discussion was needed. Some representatives sought clarification on the nature and sources of the proposed funding.

173. One representative asked whether putting forth the draft decision did not constitute an implicit acknowledgment that previous funding from parties not operating under paragraph 1 of article 5 had been inadequate. The representative of Switzerland said that the proposal implied not a shortage of funds but rather the lack of an adequate vehicle for mobilizing them in such a way as to maximize climate benefits.

174. One representative said that financing for incremental costs beyond those covered under the Multilateral Fund was a delicate matter with potential implications for the future replenishment of the Fund and for future funding possibilities under the Global Environment Facility, as well for the approval and funding of future HCFC phase-out management plans. He also said that no decision had been reached on the Multilateral Fund Climate Impact Indicator, which was proposed in the text as a means of establishing the climate impact of alternatives. Another representative said that the

guidelines for developing HCFC phase-out management plans asked implementing agencies and parties, when preparing plans, to explore other sources of funding to maximize climate benefits, making the proposed draft decision redundant. She added that the experience of her party was that mobilizing additional funding was in reality very difficult, and she said that her country favoured the current practice of the Multilateral Fund of enhancing support for climate-friendly technologies in project development.

175. The Working Group agreed that interested parties should discuss the matter and report to the Working Group on the results of their discussions.

176. Following those discussions the Working Group agreed to forward the draft decision, enclosed in its entirety in square brackets as set out in section I of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration, on the understanding that interested parties would continue to work to resolve outstanding issues before that meeting. Parties were invited to submit comments, by 15 September 2012, to the proponent of the draft decision, who undertook to compile the comments and circulate them to interested parties.

E. Update on the Bali Declaration

177. Introducing the item, the representative of Indonesia recalled the Bali Declaration on Transitioning to Low Global Warming Potential Alternatives to Ozone Depleting Substances, which had been adopted at the combined ninth meeting of the Conference of the Parties to the Vienna Convention and Twenty-Third Meeting of the Parties to the Montreal Protocol. A total of 94 parties had signed the Declaration to date, and it would remain open for signature until the Twenty-Fourth Meeting of the Parties the following November. She said that the Montreal Protocol, a model of effective international cooperation, faced a serious challenge in the form of high-GWP alternatives to ozone-depleting substances. Arguing that the Bali Declaration provided a means of facing that challenge by working toward a transition to low-GWP alternatives to ozone-depleting substances, she urged all parties to sign the declaration before it closed for signature.

178. One representative took the floor to express his Government's full support for the Bali Declaration, commending Indonesia on the leadership it had shown in drafting the Declaration, and urged other parties to sign it before the Twenty-Fourth Meeting of the Parties.

179. The Co-Chair invited interested parties to continue discussing the Bali Declaration informally and to seek any necessary clarification from the delegation of Indonesia.

F. Clean production of hydrochlorofluorocarbon-22 through by-product emission control

180. The representative of Mexico introduced a conference room paper containing a draft decision on clean production of HCFC-22 through by-product emission control, submitted by Burkina Faso, Canada, Comoros, Egypt, Mexico, Senegal and the United States. He said that the draft decision had been developed in response to the fact that certain facilities or production lines emitting HFC-23 as a by-product of HCFC-22 production did not earn emission reduction credits under the Clean Development Mechanism; accordingly, the draft decision proposed that the Executive Committee of the Multilateral Fund should consider proposals for cost-effective demonstration projects aiming to eliminate those by-product emissions and requested the Technology and Economic Assessment Panel to conduct a study of the costs and benefits of such projects.

181. A number of representatives said that the draft decision warranted further consideration. One representative, speaking on behalf of a group of countries, said that the issue was linked to feedstock uses and should be considered in relation to that matter. Another representative said that while production of HCFC-22 would be reduced in the near future due to the phase-out of production and consumption of HCFC, production might continue for some time for feedstock uses and that it was the responsibility of the Montreal Protocol to deal with the adverse consequences of its decisions. In addition, it would be useful to start collecting data on the cost-effectiveness of measures to control HFC-23 emissions during the production of HCFC-22.

182. One representative, supported by another, said that control of emissions of HFC-23 fell under the purview of the United Nations Framework Convention on Climate Change and thus was not within the mandate of the Montreal Protocol; nor was clean production an element of decision XIX/6 of the Meeting of the Parties, dealing with the accelerated phase-out of HCFCs. A proponent of the draft decision said that it was consistent with work being undertaken under the Executive Committee of the Multilateral Fund to develop projects to phase out ozone-depleting substances while taking account of the ensuing climate benefits, suggesting that the voluntary development of projects that shed light on the cost-effectiveness of such action would facilitate the work of the Montreal Protocol. Another

representative said that, in line with decision XIX/6, the proposed draft decision would assist in gathering information that would help the development of projects with reduced environmental impacts and would clarify the implications of the various financing options being considered by the Executive Committee.

183. The Working Group agreed that interested parties should discuss the matter informally and report to the Working Group on the results of their discussions.

184. Following those discussions the Working Group agreed to forward the draft decision, as set out in section H of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration, on the understanding that interested parties would continue to work to resolve outstanding issues before that meeting.

G. Implications of the outcome of the recently concluded United Nations Conference on Sustainable Development on implementation of the Montreal Protocol

185. The representative of Saint Lucia introduced a conference room paper submitted by Saint Lucia and Trinidad and Tobago on the implications for the implementation of the Montreal Protocol of the United Nations Conference on Sustainable Development. She recalled that paragraph 178 of the outcome document of the Conference recognized small island developing States as special in view of their unique and particular vulnerabilities, including their small size, remoteness, narrow resource and export base, and exposure to global environmental challenges and external economic shocks. Noting that 39 of the 197 parties to the Montreal Protocol were recognized by the United Nations as small island developing States, she explained that the draft decision would ask the parties to recognize their vulnerabilities and take them into account when asking these States to meet their Protocol obligations and considering their efforts to select and make the transition to longer-term energy-efficient, ozone- and climate-friendly alternatives.

186. Many representatives, including those of other small island developing States, expressed support for the draft decision. Some nevertheless expressed caution with regard to the complexity of the issue, and they called for further discussion to enable the parties to better understand the aim and implications of the proposed operative paragraph. Two representatives said that they hoped that the scope of the proposal could be broadened to include other countries and their vulnerabilities in the face of climate change.

187. One representative said that he opposed discussion of the proposal, as paragraph 178 of the Conference on Sustainable Development outcome document made no mention of ozone-depleting substances.

188. Several representatives expressed reservations regarding the establishment of a contact group for further discussion. Another suggested that given the small amount of time left for discussion during the current meeting, the matter could be discussed intersessionally. The Working Group agreed that interested parties should hold informal consultations.

189. Following those consultations the Working Group agreed to forward the draft decision, as set out in section L of annex I to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.

H. Review by the Scientific Assessment Panel of RC-316c

190. The representative of the United States of America introduced a conference room paper setting out a draft decision that requested the Scientific Assessment Panel to review the ozone-depleting and global-warming potential of RC-316c, which had been identified by the Chemicals Technical Options Committee during the presentation on the 2012 progress report as a new CFC, not currently controlled by the Montreal Protocol, that was being investigated by the Russian Federation. The draft decision would invite parties to provide information on the substance and would request the Panel to conduct a preliminary assessment and report its findings to the Working Group at its thirty-third meeting.

191. The representative of the Russian Federation said that he had learned from the draft report of the Chemicals Technical Options Committee that the substance had already been registered in some countries, suggesting that it thus could not be described as a new substance. According to information provided by the Russian developer of the substance, however, it was a new substance not yet registered in the Russian Federation and was currently being tested in the country's aerospace industry. Noting that the Secretariat had recently written to his Government to request that it evaluate the ozone-depleting potential of the substance, he suggested that information about the substance, if indeed it was registered and not a new substance, could be obtained from its makers, and therefore any

party could investigate it without doing so through the Montreal Protocol. The evaluation of the ozone-depleting and global-warming potential of the substance could be provided only by the developer of the substance. His delegation therefore deemed it unnecessary to consider the draft decision.

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

193. Following those discussions the Working Group agreed to forward the draft decision, as set out in annex I K to the present report, to the Twenty-Fourth Meeting of the Parties for further consideration.

I. Preparations for the Twenty-Fourth Meeting of the Parties

194. The representative of Switzerland, describing the prominent role played by the city of Geneva as the venue for many historic and important environmental negotiations, outlined preparations for the Twenty-Fourth Meeting of the Parties, which would take place in that city from 12 to 16 November 2012 and would feature, inter alia, a scientific seminar organized by the Swiss Government and the Secretariat and a reception to celebrate the twenty-fifth anniversary of the Protocol.

XII. Adoption of the report

195. The Working Group adopted the present report on the afternoon of Friday, 27 July 2012, on the basis of the draft report contained in documents UNEP/OzL.Pro.WG.1/32/L.1 and L.1/Add.1. The Ozone Secretariat was entrusted with the finalization of the report following the closure of the meeting.

196. In reference to the draft decisions set out in annex I to the present report, it was reiterated by several representatives and agreed by the Working Group that, in accordance with the usual practice and irrespective of the presence or absence of square brackets, all draft decisions were forwarded to the Twenty-Fourth Meeting of the Parties for further consideration; the draft decisions therefore did not constitute agreed text and were subject in their entirety to further negotiation.

XIII. Closure of the meeting

197. Following the customary exchange of courtesies, the thirty-second meeting of the Open-ended Working Group of the Parties to the Montreal Protocol was declared closed at 7.20 p.m. on Friday, 27 July 2012.

Annex I

Draft decisions

The Working Group agreed to forward to the Twenty-Fourth Meeting of the Parties the following draft decisions for further consideration, on the understanding that they did not constitute agreed text and were subject in their entirety to further negotiation.

A. Draft decision on essential-use nominations for controlled substances for 2013

Submission by China and the Russian Federation

[The Twenty-Fourth Meeting of the Parties decides:

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

Mindful that, according to decision IV/25, the use of chlorofluorocarbons for metered-dose inhalers does not qualify as an essential use if technically and economically feasible alternatives or substitutes are available that are acceptable from the standpoint of environment and health,

Noting the Panel's conclusion that technically satisfactory alternatives to chlorofluorocarbon-based metered-dose inhalers are available for some therapeutic formulations for treating asthma and chronic obstructive pulmonary disease,

Taking into account the Panel's analysis and recommendations for essential-use exemptions for controlled substances for the manufacture of metered-dose inhalers used for asthma and chronic obstructive pulmonary disease,

Welcoming the continued progress in several parties operating under paragraph 1 of Article 5 in reducing their reliance on chlorofluorocarbon-based metered-dose inhalers as alternatives are developed, receive regulatory approval and are marketed for sale,

1. To authorize the levels of production and consumption for 2013 necessary to satisfy essential uses of chlorofluorocarbons for metered-dose inhalers for asthma and chronic obstructive pulmonary disease specified in the annex to the present decision;
2. To request nominating parties to supply to the Medical Technical Options Committee information to enable assessment of essential-use nominations in accordance with the criteria set out in decision IV/25 and subsequent relevant decisions as set out in the handbook on essential-use nominations;
3. To encourage parties with essential-use exemptions in 2013 to consider sourcing required pharmaceutical-grade chlorofluorocarbons initially from stockpiles where they are available and accessible, provided that such stockpiles are used subject to the conditions established by the Meeting of the Parties in paragraph 2 of its decision VII/28;
4. To encourage parties with stockpiles of pharmaceutical-grade chlorofluorocarbons potentially available for export to parties with essential-use exemptions in 2013 to notify the Ozone Secretariat of such quantities and of a contact point by 31 December 2012;
5. To request the Secretariat to post on its website details of the potentially available stocks referred to in the paragraph 4 of the present decision;
6. That the parties listed in the annex to the present decision shall have full flexibility in sourcing the quantity of pharmaceutical-grade chlorofluorocarbons to the extent required for manufacturing metered-dose inhalers, as authorized in paragraph 1 of the present decision, from imports, from domestic producers or from existing stockpiles;
7. To request parties to consider domestic regulations to ban the launch or sale of new chlorofluorocarbon-based metered-dose inhalers products, even if such products have been approved;
8. To encourage parties to fast-track their administration processes for the registration of metered-dose inhaler products in order to speed up the transition to chlorofluorocarbon-free alternatives.

Annex**Essential-use authorizations for 2013 of chlorofluorocarbons for metered-dose inhalers**

(Metric tonnes)

<i>Parties</i>	<i>2013</i>
China	[395.82] [386.82]
Russian Federation	[212]

B. Draft decision on essential-use exemption for chlorofluorocarbon-113 for aerospace applications in the Russian Federation**Submission by the Russian Federation**

The Twenty-Fourth Meeting of the Parties decides:

Noting that the Chemical Technical Options Committee has concluded that the nomination of the Russian Federation satisfies the criteria to qualify as essential use under decision IV/25, including the absence of available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health,

Noting also that the Chemical Technical Options Committee recommended the acceleration of efforts to introduce appropriate alternatives to investigate materials compatible with alternatives and the adoption of newly designed equipment to complete the phase-out of chlorofluorocarbon-113 (CFC-113) within agreed time schedule,

Noting that the Russian Federation provided in its essential-use exemption nomination a final phase-out plan and nominated 2016 as the final date for CFC-113 use in this application,

Noting also that the Russian Federation is continuing its efforts to introduce alternative solvents in order to gradually reduce consumption of CFC-113 in the aerospace industry to a maximum of 75 metric tonnes in 2015,

1. To authorize an essential-use exemption for the production and consumption in 2013 of 95 metric tonnes of CFC-113 in the Russian Federation for chlorofluorocarbon applications in its aerospace industry;

2. To request the Russian Federation to continue its efforts to follow up the CFC-113 final phase-out plan and explore further the possibility of importing CFC-113 of the required quality for its aerospace industry needs from available global stocks as recommended by the Chemical Technical Options Committee of the Technology and Economic Assessment Panel.

C. Draft decision on quarantine and pre-shipment uses of methyl bromide**Submission by the contact group on quarantine and pre-shipment uses of methyl bromide**

[The Twenty-Fourth Meeting of the Parties decides:

Recalling the need for consistent reporting on methyl bromide consumption for quarantine and pre-shipment uses,

Recalling decision XXIII/5, in particular its paragraph 2, which invites parties in a position to do so, on a voluntary basis, to submit information to the Ozone Secretariat by 31 March 2013 on:

(a) The amount of methyl bromide used to comply with phytosanitary requirements of destination countries; and

(b) Phytosanitary requirements for imported commodities that must be met through the use of methyl bromide,

Recalling also decision XXIII/5, in particular its paragraph 3, which urges parties to comply with the reporting requirements of Article 7 and to provide data on the amount of methyl bromide used for quarantine and pre-shipment applications annually, and invites parties in a position to do so, on a

voluntary basis, to supplement such data by reporting to the Secretariat information on methyl bromide uses recorded and collated pursuant to the recommendation of the Commission on Phytosanitary Measures,

1. To request the Technology and Economic Assessment Panel to provide for consideration by the Open-ended Working Group at its thirty-third meeting, and [each year] [every other year] [until 2020] [every four years] thereafter, an updated report that summarizes the data regarding methyl bromide [uses for quarantine and pre-shipment] submitted under Article 7 of the Protocol [for quarantine and pre-shipment uses] [strictly] on a regional basis and provides an analysis of the trends in that data, [also indicating which assumptions are made in the analysis];
2. To request the Ozone Secretariat to remind [and encourage] parties to submit information by 31 March 2013, on a voluntary basis, in accordance with paragraph 2 of decision XXIII/5;
3. To [invite] [urge] [encourage] parties that have not yet established procedures for data collection on methyl bromide use for quarantine and pre-shipment or wish to improve existing procedures to [consider using] [use] [take note of] the elements identified by the Technology and Economic Assessment Panel [in section 10.4.4 of the Panel's 2012 progress report] as essential in its 2012 progress report;
4. To request the Ozone Secretariat to upload the forms that have been provided as examples in [section 10.4.2] of the Technology and Economic Assessment Panel's 2012 progress report;
5. [To reiterate that parties are urged to comply with the reporting requirements of Article 7 and to provide data on the amount of methyl bromide used for quarantine and pre-shipment applications annually, and to request the Ozone Secretariat to individually clarify with parties for which no entries are recorded in the relevant section of the reporting form whether or not consumption of methyl bromide for quarantine and pre-shipment occurred.]]

D. Draft decision on feedstock uses

Submission by the European Union and Croatia

Explanatory note

In decision XXI/8(3), parties requested the Technology and Economic Assessment Panel (TEAP) "to investigate chemical alternatives to ODS in exempted feedstock uses and investigate alternatives, including not-in-kind alternatives, to products made with such process agents and feedstocks and provide assessment of the technical and economic feasibility of reducing or eliminating such use and emissions."

TEAP presented its findings in that regard in its 2011 Assessment Report and, more recently, in its 2012 Progress Report. On the basis of those findings, it can be noted that, among other things:

- (a) Quantities of ozone-depleting substances (ODS) used for feedstock amount currently to over 1 million metric tons (over 433 000 ODP tons) and are expected to grow in the future. Without closer monitoring, there is a risk that significant amounts of ODS will be diverted to other uses which are either banned (e.g., CFCs, CTC) or largely limited (e.g., MB, HCFCs);
- (b) Emission rates from feedstock uses remain uncertain owing to a lack of robust information that could be applied in all regions or for all processes. TEAP, however, estimates that they are probably in the range of 0.1 – 5.0 per cent, depending on the process and the level of emission controls. Even when taking only 1 per cent as the average, annual emissions would amount to about 10,000 metric tons and about 4,400 ODP tons. Since the majority (over 77 per cent) of the quantities of ODS used for feedstock are CFCs, CTC and HCFCs, which are also potent greenhouse gases, the annual emissions in terms of CO₂eq would amount to approximately 12 million tons CO₂eq, assuming an average GWP of 1 500;
- (c) There may also be quantities of ODS used for feedstock which are not reported, and even where data is reported significant discrepancies between imports and exports can be observed;
- (d) There is insufficient information available on possible alternative technologies to ODS in feedstock uses.

These observations clearly indicate the urgent need for addressing feedstock uses of ODS. Measures may include exchanging information on alternative technologies, reducing ODS emissions from such processes and closer monitoring in general.

Closer monitoring would assist parties in managing ozone-depleting substances and reducing threats to a successful phase-out. Improved reporting on feedstock would help to estimate the quantities of ODS used as feedstock in different types of processes. The labelling of ODS containers intended for feedstock could prevent diversion to other uses of ODS.

Communicating and sharing existing knowledge on types of processes in which ODS are used as feedstock, alternatives that avoid the use of ODS and information about better products not requiring ODS feedstock will also facilitate addressing emissions of ozone-depleting substances in uses that are not relevant for the calculation of consumption. Calling for better emission controls would diminish emissions from feedstock uses but also have positive side effects in other areas, notably when CTC is used, since this is a toxic substance.

In its 2012 Progress Report, TEAP emphasized the problem of the proper classification of ODS use in certain chemical processes as feedstock or process agent. On the basis of information received from the parties concerned, TEAP clarified that the use of CTC in the process of vinyl chloride monomer (VCM) production by pyrolysis of ethylene dichloride can be considered as a feedstock use and not a process agent use. However, as the design of this process can vary significantly from plant to plant, there is a need to request those parties having VCM production that have not yet submitted information to submit information to TEAP through the Ozone Secretariat on the use of CTC in such processes in order to allow TEAP to identify whether the relevant use is process agent or feedstock use.

Draft decision

The Twenty-Fourth Meeting of the Parties decides:

Recalling Article 1 of the Montreal Protocol, which indicates that the amount of ozone-depleting substances entirely used as feedstock in the manufacture of other chemicals shall not be counted in the calculation of “production” of ozone-depleting substances,

Recalling also Article 7 of the Montreal Protocol, mandating, inter alia, reporting on feedstock uses,

Recalling further paragraph 1 of decision VII/30, in which, inter alia, the parties specified that importing countries shall report the quantities of ozone-depleting substances imported for feedstock uses,

Recalling decision IV/12, in which the parties clarified that only insignificant quantities of ozone-depleting substances originating from inadvertent or coincidental production during a manufacturing process, from unreacted feedstock, or from their use as process agents which are present in chemical substances as trace impurities, or that are emitted during product manufacture or handling, shall be considered not to be covered by the definition of an ozone-depleting substance contained in paragraph 4 of Article 1 of the Montreal Protocol, and recalling also that in decision IV/12 the parties were urged to take steps to minimize emissions of such substances, including such steps as avoidance of the creation of such emissions and reduction of emissions using practicable control technologies or process changes, containment or destruction,

Noting with concern that the Technology and Economic Assessment Panel reported a continued increase in the global production of ozone-depleting substances for feedstock uses, and mindful that, even when emission rates are assumed to be low, the quantities emitted pose a notable threat of ozone depletion and contribute considerably to global warming,

Mindful that carbon tetrachloride is being used in large quantities as feedstock, which may contribute to the discrepancies observed in global atmospheric abundances of carbon tetrachloride,

Mindful also that most ozone-depleting substances used as feedstock can also be employed for uses that have already been phased out and, if not appropriately monitored, could pose a threat to a successful phase-out,

Mindful further that the identification of processes in which ozone-depleting substances are used as feedstock and the promotion of alternative technologies and superior products not or no longer requiring the use of ozone-depleting substances as feedstock will facilitate the management of ozone-depleting substances,

Recalling decision XXIII/7, in which the parties stated that the use of carbon tetrachloride for vinyl chloride monomer production would be considered to be a feedstock use, on an exceptional basis, until 31 December 2012,

Noting with appreciation the information provided by the Technology and Economic Assessment Panel in its 2012 progress report about the use of carbon tetrachloride for the production of vinyl chloride monomer,

1. To confirm that the use of carbon tetrachloride in the production of vinyl chloride monomer by pyrolysis of ethylene dichloride in the processes evaluated by the Technology and Economic Assessment Panel in its 2012 progress report is considered to be a feedstock use;
2. To request parties with vinyl chloride monomer production facilities in which carbon tetrachloride is used and that have not yet reported the information requested by the parties in decision XXIII/7 to provide such information to the Panel before 28 February 2013 to allow it to clarify whether the use in a particular facility is a feedstock use or process agent use;
3. To remind all parties that reporting on quantities of ozone-depleting substances used as feedstock is obligatory under Article 7 of the Montreal Protocol;
4. To remind parties to minimize emissions of ozone-depleting substances in feedstock uses, including by taking measures to avoid emissions, such as control technologies, process changes, containment or destruction, and to replace ozone-depleting substances with alternatives to the extent possible;
5. To call upon all parties to refrain from commissioning new production facilities using ozone-depleting substances as feedstock when alternatives to ozone-depleting substances are available for feedstock applications that meet the requirements of the products;
6. To request all parties to identify processes in which ozone-depleting substances are used as feedstock on their territory and to report to the Ozone Secretariat by 31 January 2014 aggregated information on the processes identified, including the name of the end-products, with Chemical Abstract Service (CAS) numbers if available, and the types and amounts of ozone-depleting substances used in each process, and to update that information as new feedstock uses are identified in their territories;
7. To request all parties to provide information to the Ozone Secretariat on new alternatives replacing any feedstock uses reported under paragraph 4 of the present decision;
8. To request the Ozone Secretariat to publish on its website and update annually an aggregated list of feedstock uses of ozone-depleting substances and of alternatives to ozone-depleting substances for those uses reported by the parties in accordance with paragraph 4 of the present decision, to include:
 - (a) The end-products of the processes, with the CAS numbers, if available;
 - (b) The types of ozone-depleting substances used in the process;
 - (c) The quantity of the ozone-depleting substances used in the processes;
 - (d) The total quantity for each substance over all uses;
9. To request all parties to consider introducing labelling requirements for ozone-depleting substance containers to allow for the identification of the intended use of the substances in the containers;
10. To request the Technology and Economic Assessment Panel to continue its work and to provide, in its 2013 progress report, information as called for in decision XXI/8, in particular on the identification of alternatives to ozone-depleting substances for feedstock uses, and to assess the technical and economic feasibility of measures to reduce or eliminate such uses and emissions.

E. Draft decision on additional information on alternatives to ozone-depleting substances

Submission by the contact group on additional information on alternatives to ozone-depleting substances

[The Twenty-Fourth Meeting of the Parties decides:

Recalling the special report of the Technology and Economic Assessment Panel and the Intergovernmental Panel on Climate Change entitled *Safeguarding the Ozone Layer and the Global Climate System: Issues Related to Hydrofluorocarbons and Perfluorocarbons*,

Recalling also the report of the Technology and Economic Assessment Panel on alternatives to hydrochlorofluorocarbons in the refrigeration and air-conditioning sector in parties operating under paragraph 1 of Article 5 with high ambient temperatures and unique operating conditions, submitted to the Open-ended Working Group at its thirtieth meeting pursuant to decision XIX/8,

Noting with appreciation volume 2 of the 2012 progress report of the Technology and Economic Assessment Panel,

Concerned about the potential growth in the production, consumption and use of high-global-warming potential alternatives to ozone-depleting substances as a result of the phase-out of ozone-depleting substances,

[Recalling that in decision XIX/6 the parties requested the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, when developing and applying funding criteria for projects and programmes for the accelerated phase-out of hydrochlorofluorocarbons, to give priority to cost-effective projects that focus on, among other things, substitutes and alternatives that minimize other impacts on the environment, including on the climate,]

Aware of the increasing availability of low-global-warming-potential alternatives to ozone-depleting substances,

Reaffirming that expertise is available under the Montreal Protocol in the sectors in which a transition to alternatives to ozone-depleting substances is under way,

To request the Technology and Economic Assessment Panel to [establish a [temporary subsidiary body][task force] that includes current members of its technical options committees, supplemented by experts with additional expertise [on [the most recent] alternatives and technologies [not yet fully represented on the TEAP], to prepare a draft report for consideration by the Open-ended Working Group at its thirty-third meeting and a final report to be submitted to the Twenty-Fifth Meeting of the Parties that would]:

(a) Identify and describe, for each sector and end-use, the efficacy of all [low-global-warming-potential][commercially available, [technically proven] environmentally friendly] alternatives to hydrochlorofluorocarbons [and chlorofluorocarbons] [, including not in kind alternatives,]currently deployed [taking into account safety health and environmental considerations, including water use, waste disposal, energy efficiency and life cycle analysis][and anticipated to be available in the periods [before 2015] [before 2020][2015–2020, 2020–2025, 2025–2030, 2030–2035 and after 2035];

[(a) alt. identify and describe for each sector and end use commercially available technically proven environmentally friendly alternatives [including not in kind alternatives] to HCFCs currently deployed, taking into account safety health and environmental considerations including water use, waste disposal, energy efficiency and [life cycle analysis]before 2020, 2015 to 2020, 2020-2025, 2025-2030, 2030-2035 and after 2035;] [before 2020, and to the extent possible, indicating trends up to 2030;]

(b) [Analyse the technical and economic feasibility of options for [minimizing other impacts on the environment.][reducing reliance on hydrofluorocarbons in the periods in future years considering the time frames specified in paragraph 1 (a) of the present decision]];

(c) [Assess the [potential] [time] [for][current] market penetration of [low [and lower] global-warming-potential][environmentally friendly] alternatives] [flammable alternatives] by sector [and end uses] [in 2015, 2020, 2025, 2030 and 2035, assuming, inter alia, that appropriate incentives and standards will be in place to facilitate their adoption][taking into account the barrier of national and international standards involved]];

[(c) alt. Assess the [current][potential time for] feasibility of commercial adoption of [low and lower global warming potential][environment friendly] alternatives by sector [and end uses] [identifying how international standards such as those related to flammable substances may need to be revised to facilitate adoption of such alternatives.] [and discussing factors influencing market uptake such as standards and regulations on the use of flammable substances;]

(d) Further identify [environmentally friendly, economically viable, technically proven, [currently deployed][or under development][low-global-warming-potential] alternatives to hydrochlorofluorocarbons [and chlorofluorocarbons] that are suitable for use in high ambient temperatures, including how such temperatures may affect efficiency or other operational parameters [and considering in particular their availability by the dates in paragraph (a)];

[(e) Estimate the proportion of high-global-warming-potential alternatives that can be avoided and/or eliminated in each key application where hydrochlorofluorocarbons and chlorofluorocarbons are or have been used in the time frames specified in paragraph 1 (a) of the present decision, taking into account the commercial availability and penetration of low-global-warming-potential alternatives;]

[(e) alt. Evaluate the feasibility of environmentally friendly alternatives [of HFCs] [to HCFCs] in each key application taking into account the commercial availability, economic feasibility, [[relevant]standards under revision] and [their market] penetration [of low global warming potential alternatives;]

1. [To encourage parties in a position to do so to submit to the Ozone Secretariat no later than 1 May 2013 best available data on, or estimates of, their current and historical annual production and consumption of individual hydrofluorocarbons, requesting those data to be treated as confidential where necessary;][to enable TEAP to assess the climate benefits of the HCFC phase out;]

2 alt. [To encourage parties to provide the information on [environmentally friendly][the] alternatives of HCFCs to TEAP for their reference;]

2. To encourage [non article 5] parties [for selection of alternatives to HCFCs] [to [revisit their domestic policies with a view to promoting] [promote] policies and measures aimed at avoiding the selection of high-global-warming-potential]] alternatives to hydrochlorofluorocarbons [that are environmentally friendly, including with respect to water use, waste disposal, energy efficiency and life cycle while taking into account safety and health] [and other ozone-depleting substances in applications in which technological, economical, market-available and tested alternatives exist that minimize impacts on the environment,[in particular on the climate, while meeting other] health, safety and economic considerations;]

3. [To request Article 2 countries to provide adequate financial and capacity building support and transfer of technologies to Article 5 countries for the application of environmentally friendly alternatives to HCFCs;]

4 alt. [To encourage the Executive Committee of the Multilateral Fund to continue to consider projects that provide financial and capacity building support to Article 5 countries for the application of environmentally friendly alternatives to HCFCs.]

F. Draft decision on the terms of reference, code of conduct and disclosure and conflict of interest guidelines for the Technology and Economic Assessment Panel and its technical options committees and temporary subsidiary bodies

Submission by the contact group on Technology and Economic Assessment Panel issues

[The Twenty-Fourth Meeting of the Parties decides:

Noting paragraph 17 of decision XXIII/10, in which the parties requested the Technology and Economic Assessment Panel to revise its draft guidelines on recusal, taking into account similar guidelines in other multilateral forums, and provide them to the Open-ended Working Group for consideration at its thirty-second meeting,

Noting also the terms of reference of the Panel as set out in annex V of the report of the Eighth Meeting of the Parties, as amended by decision XVIII/19,

{Include a note on Dec XXIII/10 request to TEAP to update the TOR?}

Recalling decision VII/34 on the organization and functioning of the TEAP and specifically on efforts to increase the participation of experts from Parties operating under paragraph 1 of Article 5 (Article 5 Parties) in order to improve geographical expertise and balance,

Bearing in mind that the role of the Panel [and its SB] makes it essential to avoid even the appearance of any conflict between individual members' interests and their duties as Panel members,

Bearing in mind also that it is in the interest of the Panel [and its SB] to maintain public confidence in its integrity by adhering closely to its terms of reference,

1. To request the Technology and Economic Assessment Panel to make recommendations on the future configuration and composition of its technical options committees [while respecting geographic, A5/non-A5 and gender balance as well as technical capabilities in particular with respect to the [different types of alternatives]] to the Open-Ended Working Group at its thirty-third meeting, bearing in mind anticipated workloads;

2. To approve the terms of reference and the conflict of interest and disclosure policy for the Technology and Economic Assessment Panel, its technical options committees and any temporary subsidiary bodies set up by those bodies, as contained in the annex to [the present decision][the report of the Twenty-Fourth Meeting of the Parties], in place of the terms of reference set out in annex V to the report of the Eighth Meeting of the Parties, as amended.

Annex

Terms of reference of the Technology and Economic Assessment Panel and its technical options committees and temporary subsidiary bodies

1. Scope of Work

The tasks undertaken by the TEAP are those specified in Article 6 of the Montreal Protocol in addition to those requested from time to time at Meetings of the Parties. The TEAP analyses and presents technical information [and recommendations when specifically requested]. It does not evaluate policy issues and does not recommend policy. The TEAP presents technical and economic information relevant to policy. Furthermore, the TEAP does not judge the merit or success of national plans, strategies, or regulations. {Tasks of TOCs and TF to be included.}

2.1 Size and Balance

[2.1.0

The overall goal is to achieve a representation of about 50 per cent for Article 5(1) Parties in the TEAP and TOCs and appropriate representation of expertise in the different alternatives.]

2.1.1 TEAP

The membership size of the TEAP should be about [12][18-]22 to allow it to function effectively. It should consist of the [2][3][4] Co-chairs of the TEAP, the Co-chairs of all the TOCs and [2][4-]6 Senior Experts for specific expertise[, gender balance,] and geographical balance not covered by the TEAP Co-chairs or TOC Co-chairs.

2.1.2 TOCs

Each TOC should have two [or, if appropriate, three] Co-chairs. The positions of TOC Co-chairs ~~as well as of the Senior Experts~~ must be filled to promote a geographical[, gender] and expertise balance. [The overall goal is to achieve a representation of about 50 per cent for Article 5(1) Parties in the TEAP and TOCs.] The TEAP, through its TOC Co-chairs, shall compose its TOCs, to reflect a balance of appropriate [and anticipated] expertise [and viewpoints] so that their reports and information are comprehensive, objective, and policy neutral.

2.1.3 TSBs

The TEAP, in consultation with TSB Co-chairs, shall compose its TSBs to reflect a balance of appropriate expertise [and viewpoints] so that their reports and information are comprehensive, objective, and policy neutral. The TEAP, acting through TSB Co-chairs, shall provide a description in reports by TSBs on how their composition was determined. TSB members, including co-chairs, who are not already members of the TEAP, do not become members of the TEAP by virtue of their service on the TSB.

2.2 *Nominations*

2.2.1 *TEAP*

Nominations of members to the TEAP, including Co-chairs of the TEAP and TOCs, [must][may] be made by individual Parties to the Secretariat through their respective national focal points. Such nominations will be forwarded to the Meeting of the Parties for consideration. The TEAP Co-chairs shall ensure that any potential nominee identified by TEAP for appointment to the Panel, including Co-chairs of the TEAP and TOCs, is agreed to by the national focal points of the relevant party. [A member of the TEAP, TOCs, or TSBs shall not be current a representative of a Party to the Montreal Protocol.]

2.2.2. *TOCs and TSBs*

The TEAP, working through the relevant TOC Co-chairs, shall ensure that all nominations [appointments] to its TOCs and its TSBs have been made in full consultation with the national focal points of the relevant party.

Nominations of members to a TOC (other than TOC co-chairs) or to a TSB ([including] [other than] TSB co-chairs) may be made by [the TEAP, TOC Co-Chairs or] individual Parties to the Secretariat [in full consultation with][through] their respective national focal points. Such nominations will be forwarded to the TEAP for consideration. ~~[The TEAP, working through the relevant TOC Co-chairs, shall ensure that all nominations to its TOCs and its TSBs have been made in full consultation with the national focal points of the relevant party.]~~

2.3 *Appointment of Members of TEAP*

In keeping with the intent of the Parties for a periodic review of the composition of the assessment panel, the Meeting of the Parties shall appoint the members of the TEAP for a period of no more than four years ~~[to be determined by the Parties]~~. The Meeting of the Parties may re-appoint Members of the Panel upon nomination by [its][the relevant][a] party for additional periods of up to four years each. In appointing or re-appointing members of the TEAP, the Parties should ensure continuity[, balance] as well as a reasonable turnover.

2.4 *Co-chairs*

In nominating and appointing Co-chairs of the TEAP/TOCs/TSBs, Parties should consider the following factors:

- (a) Co-chairs should have experience or skills in managing, coordinating, and building consensus in technical bodies, in addition to possessing technical expertise in relevant areas;
- (b) The Co-chairs of a TOC should not normally act as Co-chairs of another TOC; and
- (c) [The co-chairs of TEAP should not be co-chairs of a TOC.]

2.5 *Appointment of Members of TOCs*

Each TOC should have about 20-[25] members. The TOC members are appointed by the TOC Co-chairs, in consultation with the TEAP, for a period of no more than four years. TOC members may be re-appointed [following the procedure for nominations][in consultation with TEAP and the national focal points] for additional periods of up to four years each.

2.6 *Termination of Appointment*

TEAP can dismiss a member of the TEAP, TOCs, or TSBs, including Co-chairs of those bodies, by a two-thirds majority vote of the TEAP. A dismissed member has the right to appeal to the next Meeting of the Parties through the Secretariat. [Parties are informed when members leave....]

2.7 *Replacement*

If a member of the TEAP, including TOC Co-chairs, relinquishes or is unable to function, the TEAP after consultation with the nominating Party can temporarily appoint a replacement from amongst its bodies for the time up to the next Meeting of the Parties, if necessary to complete its work. For the appointment of a replacement TEAP member, the procedure set out in paragraph 2.2 should be followed.

2.8 *Subsidiary Bodies {PERHAPS MOVE TO BEFORE 2.6?}*

Temporary Subsidiary Technical Bodies (TSBs) can be appointed by the TEAP to report on specific issues of limited duration. The TEAP[/TOCs] may appoint and dissolve, subject to review by the Parties, such subsidiary bodies of technical experts when they are no longer necessary. For issues that

cannot be handled by the existing TOCs and are of substantial and continuing nature TEAP should request the establishment by the Parties of a new TOC. A decision of the Meeting of the Parties is required to confirm any TSB that exists for a period of more than one year.

2.9 *Guidelines for Nominations and Matrix of Expertise*

The TEAP/TOCs will draw up guidelines for nominating experts by the Parties. The TEAP/TOCs will publicize a matrix of expertise available and the expertise gap in the TEAP/TOCs so as to facilitate submission of appropriate nominations by the Parties. The matrix should [must] include the need for geographic [gender] and expertise balance and provide consistent information on expertise that is available and required. [The matrix would include the name and affiliation [and the specific expertise [knowledge] [in particular] [including] on different alternatives].] The TEAP/TOCs, acting through their respective co-chairs, shall ensure that the matrix is updated at least [once] a year and shall publish the matrix on the Secretariat website and in the Panel's annual progress reports. The TEAP/TOCs shall also ensure that the information in the matrix is clear, sufficient [and consistent as far as is appropriate between the TEAP and TOCs and balanced] to allow a full understanding of needed expertise. {The requirements of the matrix could be reflected as bullets.}.

3. Functioning of TEAP/TOCs/TSBs

3.1 *Language*

The TEAP/TOCs/TSBs meetings will be held and reports and other documents will be produced only in English.

3.2 *Meetings*

3.2.1 *Scheduling*

The place and time of the TEAP/TOCs/TSBs meetings will be fixed by the Co-chairs.

3.2.2 *Secretariat*

The Ozone Secretariat should attend the meetings of the TEAP whenever possible and appropriate to provide ongoing institutional advice on administrative issues when necessary.

[3.2.3 *Operating Procedures*

Co-Chairs of the TOCs should organize meetings in accordance with [aligned] standard operating procedures following best practices developed by the [Secretariat] to ensure full participation of all relevant members to the greatest extent possible, appropriate record-keeping, and proper decision-making. The standard operating procedures should be updated periodically and made available to the Parties. {NEED A DECISION TO REQUEST THE SECRETARIAT TO DEVELOP THE SOP??}

3.3 *Rules of Procedure*

The rules of procedure of the Montreal Protocol for committees and working groups will be followed in conducting the meetings of the TEAP/TOCs/TSBs, unless otherwise stated in these terms of reference for TEAP/TOCs/TSBs or other decisions approved by a Meeting of the Parties.

3.4 *Observers*

No observers will be permitted at the TEAP, TOC or TSB meetings. However, anyone can present information to the TEAP/TOCs/TSBs [with prior notice] and can be heard personally if the TEAP/TOCs/TSBs consider it necessary.

3.5 *Functioning by Members*

The TEAP/TOCs/TSBs members function on a personal basis as experts, irrespective of the source of their nominations and accept no instruction from, nor function as representatives of Governments, industries, NGOs or others.

4. Report of TEAP/TOCs/TSBs

4.1 *Procedures*

The reports of the TEAP/TOCs/TSBs will be developed through a consensus process. The reports must reflect any minority views appropriately {FURTHER VIEWS ON HOW – ALSO SEE VOL 3 OF TEAP PROGRESS REPORT.}.

4.2 *Access*

Access to materials and drafts considered by the TEAP/TOCs/TSBs will be available only to TEAP/TOCs members or others designated by TEAP/TOCs/TSBs.

4.3 *Review by TEAP*

The final reports of TOCs and TSBs will be reviewed by the TEAP and will be forwarded, without modification (other than editorial or factual corrections which have been agreed with the Co-chairs of the relevant TOC or TSB) by the TEAP to the [Meeting of the] Parties, together with any comments the TEAP may wish to provide. Any factual errors in the reports may be rectified through a corrigendum following publication, upon receipt by TEAP or the TOC of supporting documentation.

4.4 *Comment by Public*

Any member of the public can comment to the Co-chairs of TOCs and TSBs with regard to their reports and they must respond as early as possible. If there is no response, these comments can be sent to the TEAP Co-chairs for consideration by TEAP.

5. Code of conduct for Members of the Technology and Economic Assessment Panel and its bodies

Code of Conduct

[Good governance and best practices of TEAP, TOCs and TSBs are defined in accordance with the principles of transparency, predictability, accountability, responsibility and disclosure. The TEAP, TOCs and TSBs aim at a zero-tolerance of corruption.]

Members of the TEAP, TOCs and the TSBs have been asked by the Parties to undertake important responsibilities. As such, a high standard of conduct is expected of Members in discharging their duties. In order to assist members, the following guidelines have been developed as a Code of Conduct that must be followed by the members of the TEAP, TOCs, and TSBs.

1. This Code of Conduct is intended to protect Members of the TEAP, TOCs and TSBs from conflicts of interest [including corruption] in their participation. Compliance with the measures detailed in these guidelines is a condition for serving as a Member of the TEAP, the TOCs or the TSBs.
2. The Code is to enhance public confidence in the integrity of the process while encouraging experienced and competent persons to accept TEAP, TOC and/or TSB membership by:
 - establishing clear guidelines respect to conflict of interest and disclosure while and after serving as a Member, and
 - by minimizing the possibility of conflicts arising between the private interest and public duties of Members, and by providing for the resolution of such conflicts, in the public interest, should they arise.
3. In carrying out their duties, Members shall:
 - perform their official duties and arrange their private affairs in such a manner that public confidence and trust in the integrity, objectivity and impartiality of the TEAP, TOCs and TSBs are conserved and enhanced;
 - act in a manner that will bear the closest public scrutiny, an obligation that is not fully discharged by simply acting within the law of any country;
 - act in good faith for the best interest of the process;
 - exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances;
 - not give preferential treatment to anyone or any interest in any official manner related to the TEAP, TOCs or TSBs;
 - not solicit or accept significant gifts, hospitality, or other benefits from persons, groups or organizations having or likely to have dealings with the TEAP, TOCs or TSBs;
 - not accept transfers of economic benefit, other than incidental gifts, customary hospitality, or other benefits of nominal value, unless the transfer is pursuant to an enforceable contract or property right of the Member;
 - not represent or assist any outside interest in dealings before the TEAP, TOCs or TSBs;

- not knowingly take advantage of, or benefit from, information that is obtained in the course of their duties and responsibilities as a Member of the TEAP, TOCs and TSBs, and that is not generally available to the public; and
 - not act, after their term of office as a Member of the TEAP, TOCs or TSBs in such a manner as to take improper advantage of their previous office.
4. To avoid the possibility or appearance that Members of the TEAP, TOCs or TSBs might receive preferential treatment, Members shall not seek preferential treatment for themselves or third parties or act as paid intermediaries for third parties in dealings with the TEAP, TOCs or TSBs.
 6. Conflict of Interest and Disclosure Guidelines for the Technology and Economic Assessment Panel, Its Technical Options Committees and Temporary Subsidiary Bodies

Definitions

1. For the purposes of these Guidelines—
 - (a) “conflict of interest” means any current [professional, political,] financial or other interest of a Member, or of that Member’s personal partner or dependent, which, in the opinion of a reasonable person does or appears to—
 - (i) Significantly impair that individual’s objectivity in carrying out their duties and responsibilities for the TEAP, TOC, or TSB; or
 - (ii) Create an unfair advantage for any person or organization;
 - (b) “Member” means member of the TEAP, TOCs and/or TSBs;
 - (c) “recusal” means that a Member does not participate in particular [aspects][elements] of TEAP, TOC or TSB work because of a conflict of interest; and
 - (d) [“ethics advisory body”][“conflict resolution body”] means the body appointed under paragraph 22].

{Include something on illegal activities [including, corruption] in an appropriate place somewhere -- using such examples as rules set out in other international bodies like the World Bank and how the IPCC addresses this issue?}

Purposes

2. The overall purpose of these Guidelines is to protect the legitimacy, integrity, trust, and credibility of the TEAP, TOCS and TSBs and of those directly involved in the preparation of reports and activities.
3. The role of the TEAP, TOCs , and TSBs demands that they pay special attention to issues of independence and bias in order to maintain the integrity of, and public confidence in, their products and processes. It is essential that the work of TEAP and its TOCs and TSBs is not compromised by any conflict of interest.
4. Written agreement to comply with these Guidelines is a condition for service as a Member.
5. These Guidelines are to enhance public confidence in the process, while encouraging experienced and competent persons to serve on the TEAP, TOC and/or TSB, by:
 - (a) Establishing clear guidance with respect to disclosure and conflict of interest while [and after] serving as a Member;
 - (b) Minimizing the possibility of conflicts of interest arising with respect to Members, and by providing for the resolution of such conflicts, in the public interest, should they arise; and
 - (c) Balancing the needs—
 - (i) To identify the appropriate reporting requirements, and
 - (ii) To ensure the integrity of the TEAP process.
6. These Guidelines are principle-based and do not provide an exhaustive list of criteria for the identification of conflicts.

7. The TEAP, TOCS, TSBs and their Members should not be in a situation that could lead a reasonable person to question, and perhaps discount or dismiss, their work because of the existence of a conflict of interest.

Disclosure

8. Members are to disclose annually any potential conflicts of interest. They must also disclose the source of any funding for their participation in the work of the TEAP, TOC and/or TSB. [An illustrative list of other interests that should be disclosed is provided in Annex A to these Guidelines.]
9. Members are to disclose any material change to previously submitted information within 30 days of any such change.
10. Notwithstanding paragraphs 8 and 9, a Member may decline to disclose information related to activities, interests and funding where its disclosure would adversely and materially affect—
 - (a) [International relations,] defence, national security or imminent public safety;
 - (b) The course of justice in prospective or current court cases;
 - (c) The ability to assign future intellectual property rights;
 - (d) The confidentiality of commercial, government, or industrial information; or
 - (e) [Personal confidentiality].
11. Members who decline to disclose information under paragraph 10 must declare that they are doing so in their disclosure of interest under paragraphs 8 or 9 and must be completely excluded [dismissed] from discussions and decisions on related topics.

Conflict of Interest

12. A Member's strong opinion (sometimes referred to as bias), or particular perspective, regarding a particular issue or set of issues does not create a conflict of interest. The Member, or the Member's personal partner or dependent, must have an interest, ordinarily financial, that could be directly affected by the work of the relevant body. It is expected that issues of potential bias will be addressed in the TEAP, TOCs and TSBs by including Members with different perspectives and affiliations which should be balanced so far as possible. [Replace the paragraph with: "A member's strong opinion (sometimes referred to as bias), or particular perspective, regarding a particular issue or set of issues does not necessarily create a conflict of interest but it may do so. It is expected that the TEAP, TOCs and TSBs will include members with different perspectives and affiliations which should be balanced so far as possible.]
13. These Guidelines apply only to current conflicts of interest. They do not apply to past interests that have expired, no longer exist, and cannot reasonably affect current assessment. Nor do they apply to possible interests that may arise in the future but that do not currently exist, as such interests are inherently speculative and uncertain. For example, a pending application for a particular job is a current interest, but the mere possibility that one might apply for such a job in the future is not a conflict of interest.

Procedures

14. All of the bodies involved in advising on and deciding conflict of interest issues under these Guidelines should consult the relevant Member where the body has concerns about a potential conflict of interest and/or where it requires clarification of any matters arising out of a Member's disclosure. Such bodies should ensure that the relevant individuals [and, where appropriate, [the nominating Party,] [relevant focal point]] have an opportunity to discuss any concerns about a potential conflict of interest.
15. In the event that an issue regarding a potential conflict of interest arises, the relevant Member and Co-chairs should attempt to resolve the issue through consultations. If the consultations reach an impasse, an outside mediator should be selected by the Executive Secretary to assist in resolving the matter. The mediator should not be a Member and should not otherwise have any current affiliation with the relevant individuals, bodies, or issues.

- [16. At any point, the [ethics advisory][conflict resolution] body may be consulted by Members, individuals who may become Members, the TEAP, and the TOCs regarding issues related to:
- (a) Member disclosures;
 - (b) Potential conflicts of interest or other ethics issues; or
 - (c) Potential recusal of Members.
17. The [ethics advisory][conflict resolution] body must promptly inform a Member if it has been asked to advise on an issue regarding the Member. Any information provided to [and any advice provided by] the [ethics advisory][conflict resolution] body will be considered confidential and will not be used for any purpose other than consideration of conflict of interest issues under these Guidelines without the express consent of the individual providing the information [or requesting the advice, as appropriate].]
18. If an issue under these Guidelines cannot be resolved through the procedures in paragraphs 14 through 17:
- A TEAP member, including TEAP and TOC Co-chairs, may be recused from a defined area of work only by a three-fourths majority of the TEAP (excluding the individual whose recusal is at issue).
 - A TOC or TSB member, excluding TEAP and TOC Co-chairs, may be recused from a defined area of work by a majority of the Co-chairs of the relevant TOC or, in the event of a tie vote, by a three-fourths majority of the TEAP.
19. In the event of a vote under the previous paragraph, the Member whose recusal is at issue may not vote. {THINK AGAIN ABOUT "VOTE".}

Recusal

20. When a conflict of interest is determined to exist with respect to a particular Member, the Member should, depending on what is appropriate in the circumstances, be:
- (a) Excluded from decision making and discussions related to a defined area of work;
 - (b) Excluded from decision making but may participate in discussions related to a defined area of work; or
 - (c) Excluded from participation in the matter in any other manner deemed appropriate.
21. A Member who is recused completely or partially from an area of work may nevertheless answer questions with respect to that work at the request of the TEAP, TOC or TSB.

[[Ethics Advisory Body][Conflict Resolution Body]

22. The [ethics advisory][conflict resolution] body shall comprise three persons appointed by a Meeting of the Parties [upon a consensus recommendation of the TEAP [or another body]]. Members of the ethics advisory body should have expertise in conflict of interest and other ethics issues and should not be current or former Members of the TEAP, TOCs, or TSBs. {Role of the Oz Sec?} {Member to have experience in conflict resolution or law?}
23. Members of the body may be appointed for terms of three years except that, of the first three appointments to the body, one term is to be for one year and one term is to be for two years. {Management of the body, e.g. financial implications?}
24. The term of any person appointed to the body may be re-appointed by the Parties only for one further term.]
25. {There should be rules of procedure for the conflict resolution body as part of this TOR or another set of operating procedure/guidelines for TOCs.}

Annex

The following is an illustrative list of the types of interests that should be disclosed:

- (a) A current proprietary interest of a Member or his/her personal partner or dependant in a substance, technology or process (e.g., ownership of a patent) to be considered by the Technology and Economic Assessment Panel or any of its technical options committees or temporary subsidiary bodies;
- (b) A current financial interest of a Member or his/her personal partner or dependant, e.g., shares or bonds in an entity with an interest in the subject matter of the meeting or work (but not shareholdings through general mutual funds or similar arrangements where the expert has no control over the selection of shares);
- (c) A current employment, consultancy, directorship, or other position held by a Member or his/her personal partner or dependant, whether or not paid, in any entity which has an interest in the subject matter of the Technology and Economic Assessment Panel. This element of disclosure also includes paid consultancy efforts performed on behalf of an implementing agency to assist developing countries to adopt alternatives;
- (d) The provision of advice on significant issues to a government with respect to its implementation of the Montreal Protocol or engaging in the development of significant policy positions of a government for a Montreal Protocol meeting;
- (e) Performance of any paid research activities or receipt of any fellowships or grants for work related to a proposed use of an ozone-depleting substance or an alternative to a proposed use of an ozone depleting substance.]

G. Draft decision on trade of controlled substances with ships sailing under a foreign flag

Submission by the contact group on the treatment of ozone-depleting substances supplied to ships

Explanatory note

1 Introduction

Ozone-depleting substances (ODS) are used as consumables for various uses on different means of transport, for example as refrigerants on cargo or fishing ships. While ODS find multiple uses on board ships, their main application by volume is as a refrigerant. Unlike other uses, such as fire-extinguishing systems, foams blown with ODS or solvent uses, unsealed marine refrigeration equipment needs to be maintained and re-filled on a regular basis.

The question arose as to how these uses are to be addressed by the parties to ensure the appropriate transparency and compliance in the context of the reporting and licensing requirements under the Montreal Protocol. The main question was whether deliveries to ships sailing under a foreign flag need to be considered as import or export for the purpose of the Montreal Protocol.

Decision XXIII/11 asked the Ozone Secretariat, the Technology and Economic Assessment Panel and the parties to provide further information to facilitate an informed discussion. The information provided by the Ozone Secretariat and the parties (UNEP/OzL.Pro.WG.1/32/2 and UNEP/OzL.Pro.WG.1/32/INF/4) shows that parties take different approaches.

2. Potential implications

The different approaches taken by parties have numerous implications.

2.1.1 Data discrepancies

Data discrepancies result when one party reports exports to a vessel, while the flag State of the vessel does not. Such discrepancies are observed at present and, according to the data provided by Technical Options Committee on Refrigeration, Air Conditioning and Heat Pumps (RTOC), potentially affects several thousand tonnes of ODS annually.

2.1.2 Risks for phase-out plans and the presence of banks

Parties are put at risk when the national ozone unit of the importing party is not aware of the quantities. Hence these quantities would possibly not be addressed in the party's phase-out strategy in

cases where that was necessary. At a certain point in time, the party might be confronted with an unexpectedly large increase to ODS banks.

2.1.3 Illegal trade and trade with non-parties

The different approaches open a loophole for illegal trade. It would be simple for a vessel to take ODS on board while declaring them as consumption on board. If the party responsible for the vessel was not monitoring the ODS stocks appropriately, they could be unloaded anywhere and undermine the phase-out strategies of third parties. Experiences of the European Union suggest that ODS are often taken on board vessels and declared as consumption on board. However, in practice these containers are often subsequently handed over to other vessels that remain on the high seas. This appears to happen in particular within fishery fleets.

In the same way as described above, ODS could be purchased by vessels but eventually be unloaded in third countries that need to be considered as non-parties for such trade. This would undermine the control measures of the Montreal Protocol.

3 Magnitude of the problem

In its 2012 progress report the Technical Options Committee on Refrigeration, Air Conditioning and Heat Pumps provided information on the estimated refrigerant bank and related emissions.

	CFC	HCFC	HFC	Total ODP#	Total GWP
Refrigerant bank (tonnes)	1 250	26 400	4 480	2 702	67 018 600
Approximate refrigerant emissions (tonnes/year)	500	7 920	570	936	20 407 700

A typical refrigerant charge for vessels above 100 gross tonnage was found to be between 100 and 500 kg for direct systems, and between 10 and 100 kg for indirect systems. The annual refrigerant leakage rate was estimated to be as high as 20 - 40 per cent.

Experience gained in the European Union and communicated under decision XXIII/11 suggests that some of these figures might be even higher. Between January 2010 and August 2011, about 2,000 deliveries to ships under a non-European Union (EU) flag were licensed. While no thorough analysis of the different deliveries was carried out, the general observation is that fishing vessels account for the majority of it. Apparently, large amounts are also consumed by reefers and cruise ships. Individual deliveries to fishing vessels can reach several tonnes and 225 of these deliveries concerned quantities larger than 1 tonne. It was also observed that a number of ships call at EU ports several times a year requesting large volumes of ODS. This suggests that individual ships could have emission rates higher than anticipated by RTOC, transfer refrigerant to other ships (possibly even to ships of another flag State) or unload the refrigerant in other ports. Considering also the information provided by the Technology and Economic Assessment Panel, it appears unlikely that such volumes can be consumed for refrigeration purposes on a single ship which could suggest that these volumes are traded illegally, posing a threat to the success of HCFC phase-out by these parties.

4 Relevant international law

Other provisions of international law need to be considered in this discussion, most importantly maritime law and customs law. To facilitate the enforcement of the Montreal Protocol coherence with other international law would be very beneficial.

4.1 Montreal Protocol

4.1.1 Definition of import and export

The Montreal Protocol does not provide a definition of import and export and apparently these terms are interpreted differently amongst parties. In decisions IV/14 and IX/34, parties decided how cases of transit, trans-shipment and imports for re-exports shall be handled.

4.2.2 Recommendation of the Ad-Hoc Group on reporting

As outlined in the Secretariat's paper, the issue of servicing ships sailing under a foreign flag was already in addressed in the early 1990s. The first report of the ad hoc group on reporting recommended that "the quantities of controlled substances used for refilling refrigeration and fire-extinguishing systems in ports should be included in the consumption figure of the country with jurisdiction over the port."

The Ozone Secretariat highlighted that the ad hoc group addressed only the issue of refilling in ports but did not consider sales unrelated to refilling. However, nowadays refilling rarely takes place in ports. The length of time a vessel stays in port has reduced significantly and no longer allows for maintenance work to be performed. It appears to have become a common practice for the actual maintenance of refrigeration equipment on board vessels to be carried out by the on-board technician while on the high seas. The ship is solely purchasing the refrigerant in the port State.

4.2 Kyoto Convention

4.2.1 Definition of import, export and customs territory

Since the Montreal Protocol does not provide its own definition of imports and exports, relevant international customs law should be taken into account. While Parties may define this individually in the context of domestic legislation, at the international level the World Customs Organization (WCO) defines imports and exports as follows:

- Exportation: “The act of taking out or causing to be taken out any goods from the Customs territory”
- Importation: “The act of bringing or causing any good to be brought into a Customs territory”

The International Convention on Simplification and Harmonization of Customs Procedures, also known as the Revised Kyoto Convention, provides, among others, the different procedures under which imports and exports can take place.

Furthermore, as highlighted in the response of the Secretariat of the WCO to the request

of the Ozone Secretariat, the Kyoto Convention addresses the issue of so-called “stores for consumption”. These are defined as:

- “[...] goods necessary for the operation and maintenance of vessels, aircraft or trains including fuel and lubricants but excluding spare parts and equipment; which are either on board upon arrival or are taken on board during the stay in the Customs territory [...]”

This matches the purpose of the ODS delivered to ships. While stores benefit from certain reliefs, they are not excluded from the import or export definition.

The secretariat of WCO cited Standard 15 of the Convention, indicating:

- Vessels and aircraft which depart for an ultimate foreign destination shall be entitled to take on board, exempted from duties and taxes ... stores for consumption necessary for their operation and maintenance during the voyage or flight having regard also to any quantities of such stores already on board.

This puts a certain quantitative limit under which such movements can benefit from the applicable simplifications and indicates that any larger delivery shall be subject to all applicable conditions at customs.

4.3 Maritime law

The responsibility of the flag State for vessels sailing under its flag is outlined in several pieces of international maritime law, including the United Nations Convention on the Law of the Sea (UNCLOS), International Convention for the Prevention of Pollution from Ships (MARPOL) and more recently the Hong Kong Convention.

4.3.1 UNCLOS

The United Nations Convention on the Law of the Sea (UNCLOS) is the principal international maritime law. The nationality of ships is defined in Article 91 as “[...] Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship [...]”. The primary responsibility of flag States for the vessels sailing under its flag is defined in Article 92 on the status of ships as “[...] Ships shall sail under the flag of one State only and ... shall be subject to its exclusive jurisdiction [...]”.

4.3.2 MARPOL

Regulation 10 of Annex VI to the International Convention for the Prevention of Pollution from Ships defines Port State Control on operational requirements as follows:

- A ship, when in a port or an offshore terminal under the jurisdiction of another party, is subject to inspection by officers duly authorized by such party concerning operational requirements under this Annex, where there are clear grounds for believing that the master or crew are not

familiar with essential shipboard procedures relating to the prevention of air pollution from ships.

Regulation 12 of Annex VI mandates all ships over 400 gross tonnes to keep a record book of all equipment containing ODS which is not permanently sealed and maintain a record of all supply, discharges to atmosphere and land-based reception facilities, repair or maintenance and recharging of such equipment.

5. The EU proposal

When discussing how to handle such trade several objectives need to be considered to reach a sustainable solution. These are:

- Compliance with the provisions of the Montreal Protocol and earlier decisions of the parties
- Consistence with related international law such as the Kyoto Convention on harmonization of customs procedures, the international law of the seas, MARPOL and other provisions of international maritime law
- Any solution shall not affect existing baselines for HCFC
- Any solution shall not retroactively bring any party in non-compliance
- This decision shall not preclude parties from applying their domestic legislation on ozone-depleting substances as long as those requirements do not prevent other parties from applying their own legislation

The proposal by the European Union takes the approach that previous advice given to the parties by the ad hoc group and past practice should be adhered to. However, this would need to be complemented to cover cases where the actual servicing is taking place outside ports and where the delivered volumes exceed reasonable demand for servicing on board of the ship.

In this regard the key elements of the proposal are:

- To consider servicing as domestic consumption of the port State whether or not it takes place in the port provided that the quantity does not exceed reasonable demand
- In case where quantities are ordered by ships which exceed reasonable demand, those should be considered as export to the flag State whilst putting measures in place that facilitate flag States to manage these volumes or prevent such deliveries
- That even in the cases where reasonable demands are exceeded those shall not be accounted for in the calculation of the consumption of the flag State
- To request the Technology and Economic Assessment Panel to provide estimates on the demand of flag States and on reasonable quantities per ship type

The exact procedure on how the Ozone Secretariat needs to do the calculations that would ensure that the quantities appear in the accounting but are not considered for the consumption calculation in the flag State, should be defined in an annex to the final decision. These details should be specified after consultation with the relevant experts on data reporting in the Ozone Secretariat to ensure that the most practicable way is proposed. The annex should in particular clarify:

- How to avoid double counting
- At what stage of the reporting process the Ozone Secretariat would need to do the calculations, and
- How to ensure transparency and traceability

Draft decision

[The Twenty-Fourth Meeting of the Parties decides:

Considering that Article 91 of the United Nations Convention on the Law of the Sea (UNCLOS) defines the nationality of ships in the following terms: “[...] Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship [...]”,

Considering also that Article 92 of the Convention indicates that “[...] Ships shall sail under the flag of one State only and ... shall be subject to its exclusive jurisdiction [...]”,

Considering further that the World Customs Organization defines exportation as “The act of taking out or causing to be taken out any goods from the Customs territory” and importation as “The act of bringing or causing any good to be brought into a Customs territory”,

Considering that while under the International Convention for the Prevention of Pollution from Ships (MARPOL), ships can be subject to port State controls, the main responsibility for regulation and enforcement concerning the use of ozone-depleting substances on a ship lies with the flag State,

Considering also that under MARPOL hydrochlorofluorocarbons may still be used in new ships until 2020 but that dependency on hydrochlorofluorocarbons will steadily decline,

Considering further that annex VI to MARPOL requires certain ships to keep record books which, inter alia, indicate the quantities of ozone-depleting substances supplied to and discharged by the ships,

Considering that the collection of the data necessary to evaluate the use of controlled substances on ships will not be possible in a short period of time,

Considering also the recommendation of the ad hoc group of experts on reporting of data that the quantities of controlled substances used for refilling refrigeration and fire-extinguishing systems in ports should be included in the consumption figures of the countries with jurisdiction over the ports where the refilling of such systems occurs,

Considering further that the requirements of the Montreal Protocol should be consistent with those of other provisions of international law in order to facilitate their enforcement, while at the same time acknowledging that the parties have the right to different interpretations if necessary,

Acknowledging that some parties need more information about installed quantities of controlled substances on board ships for their sound management,

Acknowledging that parties shall not be precluded from applying their domestic legislation on trade in ozone-depleting substances as long as that legislation does not prevent other parties from applying their own legislation as well as the present decision,

[1. To clarify that, for [the application of the recommendation of the ad hoc group of experts on reporting of data on] the reporting of controlled substances used to service equipment on board ships sailing under foreign flags [in ports of parties other than the flag States], deliveries of controlled substances to a ship qualify as servicing and as consumption of the port State even if the actual servicing is not taking place in the port, [provided that the quantity delivered does not exceed a reasonable quantity typically used to service the equipment on board the given ship type as specified by the Technology and Economic Assessment Panel for the ship type in question;]]

[2. Also to clarify that transfers of [recovered] [waste] [used] controlled substances from ships sailing under foreign flags to appropriate facilities in ports of parties other than the flag States shall be treated accordingly, provided that the quantity of the substances transferred does not exceed the reasonable quantity referred to in paragraph 1 of the present decision;]

[3. Further to clarify that controlled substances supplied to or coming from foreign flagged ships [in unreasonable quantities] and not covered by paragraph 1 [or 2] of the present decision are to be considered as imports and exports for ship servicing and shall be reported separately under Article 7, indicating the flag States concerned and the respective quantities;]

[4. To request the Ozone Secretariat to add the exports reported pursuant to paragraph 3 of the present decision to the data reported by the flag State following the procedure specified in the annex to the present decision, but to disregard those quantities in the calculation of the consumption of the flag State for the purpose of Article 2 F of the Montreal Protocol;]

5. Also to request the Ozone Secretariat to inform the parties concerned about any changes made to their data pursuant to paragraph 4 of the present decision by including such information in the data it provides under decision XVII/16;

6. To invite parties to make use of the informal prior informed consent (iPIC) mechanism to provide information about deliveries not covered by paragraphs 1 or 2 of the present decision prior to the completion of such deliveries and to invite parties participating in the iPIC mechanism to indicate in their licensing sheets in advance whether or not they wish to receive such deliveries;

7. To request the Technology and Economic Assessment Panel to provide together with its 2013 progress report a special report including the following information:

- (a) A categorization of ship types and, per ship type, estimates of typical refrigerant charges, including a reasonable servicing demand, and to update that information in the light of new information as appropriate but at least every five years;
- (b) Information on the controlled substances still used in the construction of ships, where they are used, technical and economic information on the available environmentally benign alternatives to such substances and similar information for replacements for existing equipment in ships, in particular in the fisheries sector;
- (c) An updated version of the information provided by the Technology and Economic Assessment Panel in its previous progress reports on transport refrigeration in the maritime sector;
8. To request the Technology and Economic Assessment Panel to provide in its 2015 progress report for each party an estimation of the quantities of controlled substances needed on board ships sailing under its flag for the period from 2016 to 2020 and to update it every five years and to advise the Panel that where no data is provided by parties, the estimate of the quantities of ozone-depleting substances needed for ship servicing shall be based on the best available data on the ship fleets of the parties;
9. To request parties to collect data on the quantities, types and uses of controlled substances brought on board and taken off ships, to the extent possible on the basis of the record book on ozone-depleting substances provided for in annex VI to MARPOL, and to provide such data to the Technology and Economic Assessment Panel by 1 January 2015;
10. To invite parties manufacturing ships to refrain from using controlled substances and to consider environmentally benign and energy-efficient alternatives wherever they are available;
11. To invite parties that are contracting parties to annex VI to MARPOL to exercise their right to monitor the conditions under which controlled substances are kept on board ships, the quantity of such substances and the associated records.

Annex

Calculation of the consumption of flag States referred to in paragraph 4]

H. Draft decision on clean production of hydrochlorofluorocarbon-22 through by-product emission control

Submission by Burkina Faso, Canada, Comoros, Egypt, Mexico, Senegal and United States of America

The Twenty-Fourth Meeting of the Parties decides:

Recognizing the opportunity to facilitate a clean production approach to the manufacture of hydrochlorofluorocarbon-22 (HCFC-22) for both controlled and feedstock uses,

Recalling decision XVIII/12, in which the parties requested the Ozone Secretariat to facilitate consultations by the Technology and Economic Assessment Panel with relevant organizations to enable the Panel to draw on the work already carried out under those organizations, including work relating to HCFC-22,

Recalling also the report of the Panel submitted pursuant to decision XVIII/12, in particular the section on the role of the Clean Development Mechanism of the Kyoto Protocol to the United Nations Framework Convention on Climate Change with respect to hydrofluorocarbon-23 (HFC-23) by-product emissions resulting from the production of HCFC-22,

Recognizing the relationship of HFC-23 to the controlled substance HCFC-22, given that the production of HCFC-22 results in the by-production of emissions of HFC-23 and that the production of HCFC-22 for feedstock uses is expected to continue beyond the phase-out of production for uses controlled under the Montreal Protocol,

Acknowledging that emissions of HFC-23 are covered by the Kyoto Protocol, and affirming that the present decision is not intended to affect such coverage,

Recognizing the need to address uncontrolled HFC-23 by-product emissions in order to avoid impacts on the climate system resulting from their release, and recognizing also that the technology to control such emissions is readily available,

1. To request the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol to consider proposals for one or more cost-effective demonstration projects to eliminate by-product emissions of HFC-23 during the production of HCFC-22 for facilities or production lines that are not earning emissions reduction credits under the Clean Development Mechanism;

2. To request the Technology and Economic Assessment Panel, in consultation with the Scientific Assessment Panel, to conduct a study of the potential costs and environmental benefits of the implementation of HFC-23 by-product control measures related to the production of HCFC-22 by facility or production line, excluding the costs and benefits associated with existing Clean Development Mechanism projects when relevant, and to prepare a report sixty days before the thirty-third meeting of the Open-ended Working Group in order to assist the parties in further considering this issue.

I. Draft decision on additional funding for the Multilateral Fund to maximize the climate benefit of the accelerated phase-out of HCFCs

Submission by Switzerland

[The Twenty-Fourth Meeting of the Parties,

Recalling that decision X/16 recognizes the importance of implementing the Montreal Protocol on Substances that Deplete the Ozone Layer and takes note of hydrofluorocarbons and perfluorocarbons as alternatives to ozone-depleting substances that have substantial impacts on the climate system,

Recalling the report by the Technology and Economic Assessment Panel to the Open-ended Working Group at its thirtieth meeting on alternatives to hydrochlorofluorocarbons in the refrigeration and air-conditioning sector in parties operating under paragraph 1 of Article 5 with high ambient temperatures and unique operating conditions, based on the request made in decision XIX/8,

Recalling that decision XIX/6 encourages Parties to promote the selection of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate, as well as meeting other health, safety and economic considerations;

Recalling that decision XIX/6 requests that the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, when developing and applying funding criteria for projects and programmes for the accelerated phase-out of hydrochlorofluorocarbons, gives priority to cost-effective projects and programmes which focus on, inter alia, substitutes and alternatives that minimize other impacts on the environment, including on the climate, taking into account global-warming potential, energy use and other relevant factors;

Recalling that in the guidelines for the preparation of HCFC phase-out management plans adopted by the Executive Committee at its fifty-fourth meeting the Committee encouraged countries and agencies to explore potential financial incentives and opportunities for additional resources to maximize the environmental benefits of HCFC phase-out management plans in accordance with subparagraph 11 (b) of decision XIX/6 of the Nineteenth Meeting of the Parties,

Recalling further that the June 2007 G8 Summit in its Declaration stated that: “We will also endeavour under the Montreal Protocol to ensure the recovery of the ozone layer by accelerating the phase-out of HCFCs in a way that supports energy efficiency and climate change objectives”,

Noting the Report of the Technology and Economic Assessment Panel Task Force about additional information on alternatives to ozone-depleting substances submitted for its consideration to the Open Ended Working Group at its thirty-second meeting,

Aware of the increasing availability of low-global-warming-potential alternatives to ozone-depleting substances, including in the refrigeration, air-conditioning and foam sectors,

Concerned about the potential for unfettered growth in the production, consumption and use of alternatives with high global-warming potential as a result of the phase-out of ozone-depleting substances particularly hydrochlorofluorocarbons,

Noting that Article 10 paragraph 2 of the Montreal Protocol stipulates that: “The mechanism established under paragraph 1 shall include a Multilateral Fund. It may also include other means of multilateral, regional and bilateral cooperation”,

Noting also that Article 10 paragraph 4 of the Montreal Protocol stipulate that: “The Multilateral Fund shall operate under the authority of the Parties who shall decide on its overall policies,”

Taking into account the decisions taken by the Executive committee of the Multilateral Fund about resource mobilisation in particular at its 67th meeting,

Para 1 Option 1

decides:

1. To request the Executive Committee to consider options to further minimize impacts on the environment other than ozone layer depletion, in particular on the climate - taking into account global-warming potential, energy use and other relevant factors - of the projects and programmes financed under the Multilateral Fund, in particular for the phase out of hydrochlorofluorocarbons, by assessing the feasibility and usefulness of a funding window to maximize climate co-benefits of the HCFC phase-out based on the following three options:

- (i) receiving voluntary contributions independently or additionally to pledged contributions;*
- (ii) [concluding agreements with other entities to facilitate cooperation and synergies on projects;]*
- (iii) [resource mobilization.]*

Para 1 Option 2

Willing to facilitate the minimization of impacts on the environment in addition to ozone layer depletion, in particular on the climate - taking into account global-warming potential, energy use and other relevant factors - of the projects and programmes financed under the Multilateral Fund in particular for the phase out of hydrochlorofluorocarbons.

decides:

1. To request the Executive Committee to assess the feasibility and usefulness of a funding window to maximize climate co-benefits of the HCFC phase-out based on the following three options:

- (i) receiving voluntary contributions independently or additionally to pledged contributions;*
- (ii) [concluding agreements with other entities to facilitate cooperation and synergies on projects;]*
- (iii) [resource mobilization.]*

2. To further request the Executive Committee, taking into account the assessment referred to in paragraph (1) of this decision, to consider establishing such a funding window and develop terms of reference and procedures for its functioning within the existing framework of the Multilateral Fund including under the following conditions:

- (i) The funding window should be used only for providing additional funding to programmes and projects eligible for Multilateral Fund financial assistance;*
- (ii) The funding window should be used for providing additional funding only when the implementation of alternatives minimizing climate impacts could not be approved for cost reasons, in particular because it would increase the incremental costs of the project above the relevant cost-effectiveness threshold;*
- (iii) The climate impact of alternatives should be established with the help of the Multilateral Fund Climate Impact Indicator (MCII);*
- (iv) Financial support from the funding window would be approved within cost effectiveness thresholds calculated in USD/tonne CO₂equivalent [established in such a way that it would remain below the average cost effectiveness of climate change mitigation projects approved under other Multilateral environment facilities during a past period of time to be defined];*
- (v) **Option 1** [any greenhouse gas emission reductions achieved with the support of resources from the funding window would not be eligible for emission credits*

of any type]; **option 2** [any funds received through emission credits generated by greenhouse gas emission reductions achieved with the resources from the funding window should be collected by the funding window];

- (vi) Resources from the funding window could be provided on a loan basis for the funding of project components focusing on improving energy efficiency;
- (vii) In case that resources under the funding window are insufficient to cover the eligible costs of submitted projects, available resources could be allocated taking into account the significance of the climate impact that would be achieved by such projects.
- (viii) Reporting about the use of the funds available would be provide appropriately to every contributor.

3. To[call upon] [invite] governments, organisations and in particular multilateral and/or financial institutions already or not traditionally contributing to the Multilateral Fund, to indicate to the Multilateral Fund Secretariat their interest in contributing to such a funding window[, and to consider making additional support available to the funding window once established];

4. To request the Executive Committee to report at the 25th meeting of the Parties on the progress made for the establishment of the funding window.]

J. Draft decision on funding of production facilities for hydrochlorofluorocarbons

Submission by India

The Twenty-Fourth Meeting of the parties decides:

Recalling decision XIX/6, which states that funding through the Multilateral Fund for the Implementation of the Montreal Protocol shall be stable and sufficient to meet all agreed incremental costs to enable parties operating under paragraph 1 of Article 5 of the Montreal Protocol to comply with the accelerated phase-out schedule for hydrochlorofluorocarbons for both the production and consumption sectors,

Recognizing that there is limited time before the first control measures on hydrochlorofluorocarbons for parties operating under paragraph 1 of Article 5 come into force with the freeze at the baseline level in 2013 and 10 per cent reduction from the baseline in 2015,

Noting that parties operating under paragraph 1 of Article 5 with production facilities for hydrochlorofluorocarbons may be at risk of being in non-compliance with those obligations if adequate assistance is not provided through the Multilateral Fund,

1. To reiterate the intent of decision XIX/6, which is to provide stable and sufficient funding through the Multilateral Fund to meet all agreed incremental costs to enable parties operating under paragraph 1 of Article 5 to comply with the accelerated phase-out schedule for hydrochlorofluorocarbons, including the production sector;

2. To urge the Executive Committee of the Multilateral Fund to finalize as a priority matter the guidelines for funding of production facilities for hydrochlorofluorocarbons;

3. To request the Executive Committee of the Multilateral Fund, while finalizing such guidelines, to take into consideration in particular the proactive regulatory actions taken by some parties operating under paragraph 1 of Article 5 of the Montreal Protocol to limit production of hydrochlorofluorocarbons in facilities in their countries beyond those required for compliance with the relevant control schedule.

K. Draft decision on review by the Scientific Assessment Panel of RC-316c

Submission by Australia, Canada, Norway, Switzerland, the United States of America and the European Union

The Twenty-Fourth Meeting of the Parties decides:

Recalling decisions IX/24, X/8, XI/19 and XIII/5 of the Meeting of the Parties pertaining to new substances,

Noting that the Scientific Assessment Panel has developed procedures for assessing the ozone-depletion potential of new substances,

1. To invite parties in a position to do so to provide environmental assessments of RC-316c (1,2-dichloro-1,2,3,3,4,4-hexafluorocyclobutane, CAS 356-18-3), a chlorofluorocarbon not controlled by the Montreal Protocol, and any guidance on practices that can reduce intentional releases of the substance;

2. To request the Scientific Assessment Panel to conduct a preliminary assessment of RC-316c and report to the Open-ended Working Group at its thirty-third meeting on the ozone-depletion potential and global-warming potential of the substance and other factors that the Panel deems relevant.

L. Draft decision on the implications of the Rio+20 outcome document for small island developing States for the implementation of the Montreal Protocol

Submission by Saint Lucia and Trinidad and Tobago

The Twenty-Fourth Meeting of the Parties decides:

Recalling that of the 197 parties to the Montreal Protocol, 39 are recognized by the United Nations as small island developing States,

Recognizing that the outcome document of the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, from 20 to 22 June 2012, recognized “that the phase-out of ozone-depleting substances is resulting in a rapid increase in the use and release of high-global-warming potential hydrofluorocarbons to the environment”,

Recognizing decision XIX/6, in which the parties agreed to accelerate the phase-out of hydrochlorofluorocarbons and encouraged parties to promote the selection of alternatives to them that minimize environmental impacts, in particular impacts on climate, as well as meeting other health, safety and economic considerations,

Acknowledging that the outcome document of the United Nations Conference on Sustainable Development reaffirmed that “small island developing States remain a special case for sustainable development in view of their unique and particular vulnerabilities, including their small size, remoteness, narrow resource and export base, and exposure to global environmental challenges and external economic shocks”,

To recognize that small-island developing States have unique and particular vulnerabilities and to take those vulnerabilities into account in considering their efforts to meet the Montreal Protocol requirements for the phase-out of hydrochlorofluorocarbons and their efforts to select and make the transition to longer-term energy-efficient, ozone- and climate-friendly alternatives.

M. Draft decision on differences between data reported on imports and data reported on exports

Submission by the contact group on data discrepancies

Explanatory note

1. At present, data on imports and exports of controlled substances are reported by the parties on the basis of Article 7 of the Montreal Protocol and according to the reporting format as last revised by decision XVII/16. Parties exporting controlled substances are requested, inter alia, to submit

information on countries of destination in their reports. Data received are reviewed by the Ozone Secretariat in order to calculate consumption of controlled substances by individual parties. The Ozone Secretariat then provides all importing countries with information on all reported exports to their countries. Since currently there is no request for importing parties to provide information on source countries in the reports that they submit to the Ozone Secretariat, the process of clarifying any differences is lengthy and burdensome, especially for importing countries. Moreover, it should be recognized that while such differences may result from the submission of incomplete data, they may also result from illegal trade activities which have been overlooked by the customs authorities in exporting and importing countries. Thus analysis of the data may also assist parties in identifying such illegal activities.

2. The objectives of the following draft decision are:

(a) To diminish the administrative burden connected with the complexity of the process of clarifying differences between import and export data in the absence of a request for importing countries to submit information on countries of origin;

(b) To identify and prevent illegal trade activities in trade in controlled substances, including the diversion of substances into prohibited uses.

Draft decision

The Twenty-Fourth Meeting of the Parties decides:

Noting that there [are significant] may be differences in data on imports and exports of controlled substances submitted by the parties under Article 7 of the Montreal Protocol, and recognizing that while such shipments may have plausible explanations such as shipments over the end of a calendar year [differences may result from] or the submission of incomplete data, they may also result from illegal trade activities or resulting from companies that do not comply with domestic legislation without criminal intent,

Noting also that in the Article 7 data reporting format, as last revised by decision XVII/16, parties exporting controlled substances are requested to submit to the Ozone Secretariat information on countries of destination, while there is no request for parties importing controlled substances with regard to source countries,

Noting further that the absence of a request for importing countries to submit information on source countries makes the process of clarification of differences complex and burdensome for both importing and exporting countries,

Mindful that the further improvement of data reporting systems will facilitate the prevention of the illegal trade in controlled substances,

Recalling decision IV/14 and IX/34 that provided some clarification on how to report transshipments and imports for re-export and thereby provided an indication on what country is to be considered as [source country][exporting country]

2. [To request the Ozone Secretariat to revise, before 1 January 2014 [2013], the reporting format resulting from decision XVII/16 to include in Data Form 1 a column indicating the exporting Party for the quantities reported as import, and to [urge] invite the parties to implement the revised reporting format [expeditiously] as soon as possible;]

[3. To request the Ozone Secretariat to report back [every January] aggregated information related to the controlled substances in question received from the importing/re-importing to the exporting party concerned together with the information provided under decision XVII/16;]

[3. To request the ozone secretariat to compile data, on an annual basis, that is reported under article 7 on imports per paragraph 2 above, together with the information provided as per decision XVII/16 on exports and to send the parties concerned this information.]

4. To [encourage] [invite] parties [to enhance cooperation with the view to clarifying any difference in import and export data and to considering possible action as appropriate] [informed by the Ozone Secretariat [in accordance with paragraph 3 above] [to check for differences and] to [consider undertaking any] [undertake the] actions necessary to clarify the reasons for any differences found and to consider introducing preventive measures, as appropriate].

5. To invite parties to consider participation in the informal Prior Informed Consent (iPIC) scheme as a means to improve information about their potential imports of controlled ODS.

Annex II

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

I. Presentation on the 2012 progress report of the Technology and Economic Assessment Panel (pertaining to agenda items 3, 4 (a), 4 (d) and 4 (e))

The progress report of the Technology and Economic Assessment Panel (TEAP) was presented in sections. The first presentation was given by Mr. Ashley Woodcock, co-chair of the Medical Technical Options Committee (MTOC). He commenced with a summary of essential use nominations for chlorofluorocarbons (CFCs) for the manufacture of metered dose inhalers (MDIs) in 2013 from two countries (China and the Russian Federation), together with the quantities recommended by MTOC. The total quantity recommended for 2013 was 599 tonnes, 14 per cent less than the nominated quantity of 697 tonnes. He then elaborated on the essential use nomination from China, indicating that MTOC recommended 386.82 tonnes, all for domestic use, 70 per cent of which was for salbutamol CFC MDIs. He mentioned the helpful information provided on research and development efforts by 23 MDI manufacturers. MTOC identified 13 small companies using less than 5 per cent of the nominated CFC quantity that are not advanced in research and development, for which MTOC might be unable to recommend CFCs in future nominations. Mr. Woodcock described rapid progress in salbutamol transition by China's largest MDI manufacturer, and the consequent reduction by MTOC in the recommended volume of CFCs by 50 tonnes. With continued progress in China, it was feasible that salbutamol might not be essential by the end of 2013. As a result, China might wish to consider a nomination in 2013 for manufacture of CFCs in 2014 that would meet all its future needs. Ms. Helen Tope, co-chair of MTOC, then continued with the essential use nomination from the Russian Federation of 250 tonnes of CFCs for salbutamol MDIs for domestic use. The Russian Federation had reported that this would be its final essential use nomination. MTOC recommended 212 tonnes of CFCs, with any deficit in supply met by imported CFC-free inhalers. She commented that accounting frameworks and stockpile information allowed parties to track the management and deployment of CFC stockpiles, which was particularly important in avoiding new CFC production.

The co-chairs of Chemicals Technical Options Committee (CTOC), Mr. Jiang Biao and Mr. Ian Rae, gave a presentation on the CTOC section of the TEAP report. The number of process agent uses had declined, some uses had been reviewed and estimates had been made of emissions. Further work on feedstocks was accompanied by emission estimates. The use of carbon tetrachloride (CTC) in the production of vinyl chloride monomer was recognized as a feedstock use. It was recommended that the critical use nomination of CFC-113 by the Russian Federation for 2013 be approved. The ultimate phase-out date of 2016 was noted, and the use of the new solvent RC-316 was brought to the attention of the parties. Further information was provided on laboratory and analytical uses of ozone depleting substances (ODS). The presence of low concentrations of CTC in urban air might be the previously unrecognized source that could close the gap between emission estimates.

Mr. Ashford reported that the foam sector was well represented in the first phase of many HCFC phase-out management plans, partly because alternatives were available in many instances but also because HCFC-141b phase-out fit the "worst first" criterion of decision XIX/6. The two sectors where alternatives were less obvious were PU spray foam and extruded polystyrene, and that might lead to transitions being delayed until the post-2015 period. An additional factor in those transitions was the impact of blowing agent selection on the reaction to fire of those insulation products. Recent fires involving the products during construction projects had highlighted the importance of due care. A further challenge being faced was the high number of small enterprises requiring transition. Mr. Ashford noted that this was likely to be addressed in many cases via umbrella projects through systems houses. With respect to non-Article 5 parties, it was noted that unsaturated HFCs/HCFCs (HFOs) were showing improved thermal efficiency when compared with other, competing alternatives.

With respect to ODS banks, Mr. Ashford noted that waste streams from short-lived products (e.g., refrigerators) were already less ODS-rich than previously, resulting in lower climate benefit from bank management and reduced cost-effectiveness. By contrast, waste streams from buildings would remain ODS-rich, and recovery might ultimately be more cost-effective in climate terms, even with higher per-kilogram costs. However, existing demolition waste segregation practices would remain the

key driver in determining whether recovery was economically viable, especially since low carbon prices limited the contribution of carbon finance.

Mr. Dan Verdonik, co-chair of the Halons Technical Options Committee (HTOC), presented the HTOC 2012 progress report. He began with an update on the latest progress in the development of new alternatives. For total flooding applications, typically to replace halon 1301, a series of new products that generated nitrogen or mixtures of nitrogen and water through the use of pyrotechnics, similar to air-bag technology, continued to be developed. For local/streaming applications, typically to replace halon 1211, the development and testing of the unsaturated hydrobromofluorocarbon 2-BTP was continuing. Values had been published for the ozone-depletion potential (0.005 and 100-yr GWP (0.003)). Mr. Verdonik said that the agent had now passed all required aviation minimum performance tests and that toxicity testing should be completed by the end of 2012. Non-corrosive, low-toxicity water-based agents that can achieve a very low freezing point of -70°C continued to be evaluated. He also cited the HTOC report that halon 1301 continued to be produced in France and China for use as a feedstock for the manufacture of the pesticide Fipronil at steady production levels.

Mr. Verdonik said that with regard to recycling and global supplies, Indian halon users were now reporting that they had sufficient quantities of recycled halons 1301 and 1211 that were available for both internal and international recycling companies. The users also reported that halon 2402 was no longer in short supply, as it was now available as a result of ship-breaking activities within India. Approximately 1,900 tonnes of halon 1211 that had been produced before 2006 remained in China, while China's internal needs were approximately 20 tonnes per year. Despite the tightness of the global 1211 market, it was unclear whether that material could be exported in bulk. Mr. Verdonik mentioned that HTOC continued to express concern that halon recycling and banking in the Middle East was problematic owing to the low throughput. Currently, only the bank in Jordan remained operational, but that might not be sustainable in the long term. Parties might wish to consider establishing regional banking arrangements to resolve the problem. Regional banks might also be viable in other regions facing similar challenges related to low volume and throughput.

Regarding work with the International Civil Aviation Organization, Mr. Verdonik mentioned that amendments to the Chicago Convention had become applicable on 15 December 2011 which required the use of halon alternatives in (a) lavatory fire-extinguishing systems for in-production aircraft beginning in 2012 and (b) hand-held extinguishers for in-production aircraft beginning in 2017. The latter date had been agreed to in order to allow for the commercialization of the agent 2-BTP. He said that other amendments had also become applicable which required halon alternatives in engine and auxiliary power units for newly designed aircraft beginning in 2015.

Mr. Mohamed Besri, co-chair of the Methyl Bromide Technical Options Committee (MBTOC), started his presentation by summarizing methyl bromide consumption in Article 5 and non-Article 5 countries. He reported that the global consumption of methyl bromide for controlled uses was about 64,420 tonnes in 1991 and had remained above 60,000 tonnes until 1998. In 2010, global consumption decreased to 6,937 tonnes. He listed the remaining challenges in non-Article 5 and Article 5 countries for the adoption of chemical and non-chemical alternatives, e.g., registration, the emergence of new diseases and lack of research and of economic analysis. He reported that one party classified methyl bromide under quarantine and pre-shipment (QPS) for production of stock plants, while all other parties classified its use in this sector as non-QPS. He then presented the status of methyl bromide phase-out in Article 5 regions in 2010 as compared with the regional baselines (1995-1998 average). In 2008, Eastern Europe had phased out 100 per cent of its regional baseline. In 2010, the regions of Latin America and the Caribbean, Africa, and Asia and the Middle East had phased out, respectively, 55 per cent, 90 per cent and 84 per cent of their regional baselines.

Mr. Besri reported that Latin America was the region that showed the smallest relative reduction in methyl bromide consumption. He said that, for Article 5 countries, completing the process of phasing out methyl bromide over the next two years would be important with a view to ensuring compliance with the phase-out date for controlled uses of 1 January 2015. Concerning the use of methyl bromide for food-processing structures and commodities, there had been few changes in the registration status of alternatives since the previous TEAP progress report. He reported that the European Union had increased the list of foods which could be treated with sulfuryl fluoride. In California, United States of America, imported grapes were fumigated to control quarantine pests and then stored. Two cases of methyl bromide poisoning of fruit inspectors working in grape storage warehouses had been reported. As a result, new recapture facilities had been designed and adopted to reduce methyl bromide concentrations and emissions in the grape storage facilities. Mr. Besri mentioned that controlled atmosphere (CA) and modified atmosphere (MA) to control pests in food and non-food commodities and spaces were widely used commercially in small and large packing houses and on farms. The use of CA and MA for quarantine was in the initial stages of adoption.

Mr. Lambert Kuijpers, co-chair of the Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee (RTOC), then continued with the next section. He mentioned that five new refrigerants had obtained standard designations since the end of 2010 and that the focus continued on both HFCs and non-halogenated candidates, with low or very low global-warming potential being emphasized. He also said that flammable refrigerants were capturing an increasing share of research and development and that their market share in commercialized products was growing. In the area of domestic refrigeration, HFC-134a and HC-600a continued to be the preferred refrigerant options, with new production focusing on improved energy efficiency. He said that initial efforts to replace HFC-134a with HFC-1234a in that subsector had begun. In the area of commercial refrigeration, refrigerants for HCFC-22 replacement as diverse as hydrocarbons (HC-600a and HC-290), R-744, intermediate blends (for drop-in or nearly drop-in replacements for HCFC-22) and HFC-134a and R-404A were still in competition. With the exception of HC-290 (with no use in large systems owing to safety concerns), there was a lack of low-global-warming potential refrigerants with large refrigeration capacity to replace R-404A or HCFC-22 in single stage systems. Mr. Kuijpers said that the commercialized HFCs were poor alternatives to HCFC-22 in larger systems. In the area of transport refrigeration, at least two global manufacturers had started a field test of marine and trailer refrigeration units with R-744. Furthermore, hydrocarbons continued to be field tested in refrigerated trucks and home delivery vans in Germany and the United Kingdom of Great Britain and Northern Ireland. With regard to air conditioning, most Article 5 parties continued to utilize HCFC-22 as the predominant refrigerant. Propane (HC-290) was being used to replace HCFC-22 in low-charge applications; it was anticipated that HFC-32, R-744 and, possibly, HFC-161 (with a global-warming potential of 12) would be used in future.

Mr. Kuijpers mentioned that air conditioners using R-410A and R-407C were widely available in Article 5 countries. Equipment using R-410A was also being manufactured in some Article 5 countries, especially in China, which had a large export market. In the case of new heat pumps, options included HFC-32 and the refrigerants HFC-1234yf and HFC-1234ze and blends containing those refrigerants. In chillers, the alternative refrigerants included R-717, hydrocarbons, R-744, HFC-32 and new low-global-warming-potential HFCs, for which testing was now under way. Mr. Kuijpers then addressed the issue of vehicle air conditioning, saying that the decision relating to the use of HFC-1234yf as the new refrigerant for car and light truck air conditioners took into consideration regulatory approval, energy efficiency, costs, system reliability and servicing. He also mentioned that, in terms of the market, the pace of the introduction of HFC-1234yf in air conditioning units in new cars was uncertain owing to a number of issues, including refrigerant costs, availability and patent disputes. Furthermore, it had not yet been determined which refrigerant would be used for bus and rail air conditioning units, whether R-744 systems, or a selection of HFC-1234yf, as used in car air-conditioning units.

Mr. Stephen O. Andersen, co-chair of TEAP, concluded the presentation. He noted that TEAP had 22 members, 14 from non-Article 5 parties, 7 from Article 5 parties and 1 from a former country with an economy in transition. There were about 150 members of TEAP and its six technical options committees, about a third of whom came from Article 5 parties. The Montreal Protocol Trust Fund paid the travel expenses of members from Article 5 countries. Mr. Andersen mentioned that 10 parties and the European Commission sponsored travel and/or provided for the consulting expenses of some members from non-Article 5 parties, while companies, industry associations and other non-governmental organizations sponsored other members from non-Article 5 parties. He concluded by saying that TEAP and the technical options committees could recruit only those experts from non-Article 5 parties who could arrange their own financing, with the risk of biasing the membership towards the views of organizations that were interested enough in sponsoring participation.

II. Presentation on nominations for critical-use exemptions for 2013 and 2014 (agenda item 4 (b))

The co-chairs of the Methyl Bromide Technical Options Committee (MBTOC), Mr. Ian Porter and Ms. Michelle Marcotte, provided a summary of findings of the interim assessment of the critical use nominations assessed during the 2012 round, as set out in the TEAP progress report of May 2012.

Introducing the issue, Mr. Porter presented a summary of the trends in critical use exemptions since 2005. He said that the amount of methyl bromide nominated and exempted had continued to fall, from 16,050 tonnes in 2005 to 405 tonnes recommended for 2014. Only three non-Article 5 parties, Australia, Canada and the United States, continued to apply for critical use exemptions. Japan had ceased applying for nominations in this round.

Regarding available methyl bromide stocks, he said that Canada, Japan and the United States had reported, respectively, 0.6 tonnes, 9.7 tonnes and 1,249 tonnes. He explained that MBTOC critical use recommendations did not take stocks into account. He noted that stocks reported by the United States were greater than the annual critical use nominations.

He noted that two members had expressed a minority view regarding two pre-plant soil nominations and five post-harvest nominations; another member had expressed a view on MBTOC procedural issues.

He said that, as Article 5 parties could submit critical use nominations until January 2013, MBTOC was ready to revise the handbook for approval at the forthcoming Meeting of the Parties if so advised by the parties.

He then presented an overview of nominations received for pre-plant soil use of methyl bromide in 2014. At its initial meeting, interim recommendations of 357.574 tonnes had been made on three critical use nominations for pre-plant soil use from three parties (Australia, Canada and the United States). An amount of 74.15 tonnes had not been recommended.

With regard to Australian strawberry runners, MBTOC considered that, although some soil-less production has been adopted, further adoption was possible, and it recommended 90 per cent of the nomination. The party had advised of a phase-out over five years, from 2015 to 2019, provided that alternatives were registered.

With regard to Canadian strawberry runners, MBTOC recommended soil-less production for 10 per cent of the nomination and reassessment if a key alternative, chloropicrin, became available before the Meeting of the Parties. It was also recommended that the party submit a phase-out plan and expand its research efforts, in particular regarding dazomet, to comply with decision IX/6.

With regard to United States strawberry fruit, 82.8 per cent of the nominated amount had been recommended on the basis of the uptake of a number of alternatives, although since the MBTOC meeting a key alternative had been suspended.

He explained that for the strawberry nursery sector, many non-Article 5 parties had achieved phase-out, while others were either applying for critical use exemptions or had exempted control of methyl bromide use under federal regulations. Furthermore, several Article 5 parties had ceased consumption of methyl bromide for strawberry nurseries prior to its phase-out in 2015, including Brazil, Lebanon, Morocco and Turkey.

Among the key issues discussed was the fact that most remaining critical use nominations did not use emission control with barrier films, as required pursuant to decision IX/6. In addition, since the MBTOC meeting in March 2012, MI:Pic had been withdrawn from marketing and State registrations in the United States and was no longer pursued in Australia. However, registration had been retained in Japan, and other alternatives were being used in many countries and might be available to replace MI:Pic.

Research on pathogen tolerances for nursery stock would improve regulatory acceptance for certification and assist in the phase-out of remaining methyl bromide uses.

Ms. Marcotte presented the interim results of the evaluation of critical use nominations for post-harvest uses of methyl bromide. There were five critical use nominations in 2012: two for mills and food processing structures in Canada and the United States and three for commodities in Australia and the United States. Japan had completed its adoption of alternatives for the treatment of fresh chestnuts and had not sent a critical use nomination in 2012.

Australia had indicated that 2012 would be the final year for submission of its rice critical use nomination, as its rice processors were completing the adoption of alternatives. Canada had indicated that if its mills continued to need methyl bromide after 2014, they would apply individually and not as an industry sector.

She presented charts showing the downward trend of critical use nominations and critical use exemptions for each of the remaining controlled uses. In addition, a summary of the party's reasons for the application and of the MBTOC review and recommendation regarding the critical use nomination was given.

With regard to Australian rice, MBTOC recommended the full nomination, which was 50 per cent of the amount granted by the parties for 2013. MBTOC advised the party regarding steps to achieve success with phosphine fumigation, including improved temperature control.

With regard to Canadian flour mills, MBTOC recommended the full amount, which was a 35 per cent decrease in the amount granted by the parties for 2013. MBTOC noted that sulfur dioxide had still not been approved for food contact and that pests in mills were unacceptable.

With regard to United States mills and food processors, MBTOC recommended the full nomination, which was a 10 per cent decrease in the amount granted by the parties for 2013. The recommendation was disaggregated as follows: rice milling, 2.220 tonnes; pet food facilities, 4.199 tonnes; mills, 16.38 tonnes. In view of the slowing in the adoption of alternatives, MBTOC requested an updated phase-out plan.

With regard to United States dried fruits and nuts, MBTOC recommended a 34 per cent decrease (disaggregated as follows: walnuts 0.161 tonnes; dates, 0.325 tonnes; and dried plums, 0.001 tonnes). Since the party had nominated only a 10 per cent decrease, MBTOC asked for an updated phase-out plan.

MBTOC was unable to assess the United States dry cured pork critical use nomination, pending the receipt of further information. There were no effective and registered alternatives to methyl bromide: heat would alter the product and phosphine and sulfur dioxide had failed to control mites, a major pest.

III. Presentation on quarantine and pre-shipment issues (agenda item 4 (c))

Ms. Marta Pizano, co-chair of the Methyl Bromide Technical Options Committee, presented the Committee's report on production and consumption of methyl bromide for quarantine and pre-shipment purposes, in response to decision XXIII/5. She presented consumption trends for the global production of methyl bromide for quarantine and pre-shipment purposes, showing that although the overall trend was generally stable at around 11,000 tonnes, production had increased over the past three years. Four countries currently produced methyl bromide for quarantine and pre-shipment purposes, with varying fluctuations in the volumes produced on a per-year basis.

Continuing with methyl bromide consumption for quarantine and pre-shipment, Ms. Pizano showed that this had exceeded non-quarantine and pre-shipment consumption for the first time in 2009 and that that trend was continuing. She further highlighted that methyl bromide for quarantine and pre-shipment purposes was the largest remaining emissive use of methyl bromide not subject to a freeze and reduction under the Montreal Protocol. Overall global consumption in the past decade had trended downwards and consumption in non-Article 5 parties had risen recently, while the Article 5 trend was upwards but level when considered over the past five years. A detailed analysis of individual large consumers, including both Article 5 and non-Article 5 parties, ensued. An analysis of regional consumption trends showed an increase in 2010 in the region "Western Europe and others", owing mainly to the United States, and that it was now comparable to that of Asia, with a 43 per cent share of global consumption for each. The remaining share was divided between Latin America and the Caribbean (9.2 per cent), Africa (4 per cent) and Eastern Europe (0.4 per cent). With regard to categories of methyl bromide consumption for quarantine and pre-shipment purposes, the subcommittee had found that 86 parties had reported quarantine and pre-shipment consumption in 2010 and at least one other year since 1999, and that 15 parties had reported quarantine and pre-shipment consumption above 100 tonnes in 2010. Ms. Pizano recalled that the four main consumption categories of methyl bromide for quarantine and pre-shipment purposes (sawn wood and wood packaging material, grain, pre-plant soil fumigation and logs) amounted to over 70 per cent by weight of the methyl bromide consumed globally for quarantine and pre-shipment, and that TEAP had estimated that 31-47 per cent of that aggregate use could be replaced immediately with commercially available alternatives.

When addressing guidance on procedures and methods for data collection on methyl bromide consumed for quarantine and pre-shipment purposes, the Committee had provided examples of monitoring and reporting systems in place in six parties and regions, including Australia, the European Union, India, Malaysia, Japan and the United States. A list of elements considered important in monitoring methyl bromide for quarantine and pre-shipment purposes was also provided, including target pests treated and reasons for treatment. Separate forms were envisaged for the treatment of articles or commodities and of soil (pre-plant fumigation). Ms. Pizano ended her presentation with an update on work conducted by the International Plant Protection Convention on methyl bromide alternative treatments to comply with the ISPM-15 standard applicable to wood packaging material.

IV. Presentation on the treatment of ozone-depleting substances used to service ships (agenda item 5)

Mr. Lambert Kuijpers, co-chair of RTOC, gave a presentation on the work of the TEAP as requested by decision XXIII/11 and reported in the TEAP progress report. He gave an outline of the presentation, noting that decision XXIII/11 requested a summary of available data concerning the use of ozone-depleting substances on ships, the estimated refrigerant bank and an estimation of emissions. For this study, the information from the 2010 RTOC assessment report had been updated. Mr. Kuijpers elaborated on the various ship types and regulations. All ships larger than 100 GT (gross tonnes) had refrigeration systems that were monitored, and ships above 400 GT were covered by classification societies. As of January 2011, there were 103,392 seagoing ships larger than 100 GT. One system had reported that there were 318 types of ships. He said that air pollutant emissions were covered by regulation MARPOL 73/78, issued by the International Maritime Organization (IMO). As of 1 July 2010, MARPOL annex VI required ships larger than 100 GT to maintain a list of equipment. HCFC-22 had historically been the preferred refrigerant, whereas there were limited amounts of CFCs still in use. A number of HFC-based retrofit fluids were used for existing systems. In new systems, HFC-134a and R-410A were used, and ammonia had started to be applied. Mr. Kuijpers said that for ships larger than 100 GT, the refrigerant charge was 100-500 kg for direct systems and 10-100 kg for indirect systems. The annual leakage could be as high as 20 to 40 per cent. It could be reduced by the use of monitoring equipment and by regular inspections. He presented a table which showed the shares of the different refrigerants applied in direct and indirect systems on merchant ships, fishing ships and all other types of ships. For all types of ships, an 80 per cent share for HCFC-22 could be assumed. Mr. Kuijpers concluded the presentation with a table of the refrigerant banks of the various refrigerants applied and their annual emissions. The bank of HCFC-22 could be estimated at 26,400 tonnes and the total bank at 32,260 tonnes; estimates for HCFC-22 emissions were 7,920 and 9,000 tonnes per year.

V. Presentation on additional information on alternatives to ozone-depleting substances (agenda item 6)

Mr. Lambert Kuijpers, co-chair of RTOC, began the presentation of the XXIII/9 Task Force on ODS alternatives. He provided an outline and noted that decision XXIII/9 requested a report for consideration by the thirty-second meeting of the Open-ended Working Group, which should contain information on four separate elements, and that TEAP had established a task force to prepare the report, consisting of 15 members, with a first draft reviewed at the TEAP meeting held in Berlin in March 2012 and a second draft reviewed by all TEAP members in April 2012. He then continued with the first technical part of the presentation, on refrigerant banks for commercial refrigeration and stationary air-conditioning units in non-Article 5 and Article 5 countries. He explained that until 2010, the numbers had been based on accountancy reports of equipment installed in countries and that the figures for 2010-2015 consisted of extrapolated trends until 2015. He emphasized that trends that could be taken from the period 2005-2010 would continue for a number of years, owing in particular to the timeline of introducing different types of equipment into the market, and that therefore the 2015 extrapolation was reasonably reliable. He then showed pie charts and graphs relating to refrigerant banks. The 2015 estimated commercial refrigeration bank in non-Article 5 parties was about 128,000 tonnes for HFCs and 14,000 tonnes for non-HFC alternatives. For Article 5 parties, HCFCs would be the dominant bank, at about 260,000 tonnes, with the 2015 HFC bank at around 124,000 tonnes. He then presented the 2015 the stationary air conditioner bank figures. In non-Article 5 parties, HCFCs would constitute 35 per cent of the bank, with 340,000 tonnes, the high-global-warming-potential HFC bank would be approximately 550,000 tonnes and the alternatives bank would be approximately 25,000 tonnes. He then provided the figures for the 2015 the stationary air conditioning sector in Article 5 parties. In that regard, HCFCs would be the dominant bank, at a level of 870,000 tonnes, with an extra-high-global-warming-potential HFC bank at about 400,000 tonnes. The alternatives would be a little greater than 20,000 tonnes in 2015.

Mr. Roberto Peixoto, member of the Task Force then continued with an assessment of the technical, economic and environmental feasibility of options in refrigeration and air conditioning, considering the energy efficiency of the equipment and the toxicity and flammability of alternative refrigerants, greenhouse gas emissions and direct and societal costs, which were presented for some options. He said that, given that current refrigeration and air conditioning technologies, which used the vapour compression cycle, would be dominant over the coming decades, the main options regarding the replacement of HCFCs were represented by alternative chemical refrigerants, both synthetic and non-synthetic. The refrigerant options for HCFC replacement were categorized as low-global-

warming-potential and medium/high-global-warming-potential alternatives. While some of the refrigerants were widely available, several options were not fully mature at present and their application could not be achieved immediately. Such was the case with regard to such chemicals as HFC-161, HFC-1234yf and other unsaturated HFCs and blends. The application of certain types of systems for some currently available refrigerants was still under development. Aside from vapour-compression refrigeration, technologies that could be used for HCFC phase-out were: absorption cycle, desiccant cooling systems, Stirling systems and thermoelectric and a number of other thermodynamic cycles. Most of those technologies were not close to commercial viability for air-cooled air-conditioning applications. While those alternative cycles were feasible, they had thus far not been proved to be economically viable. Mr. Peixoto said that it was therefore unlikely that they would significantly penetrate those markets during the next decade, other than for potential niche applications. Alternative technologies would therefore have a minimal impact on HCFC-22 phase-out.

Mr. Daniel Colbourne, member of the XXIII/9 Task Force, gave a presentation on refrigerant cost. The Task Force had considered a variety of cost elements for different alternative refrigerants and divided the costs into direct product costs, societal costs and incremental capital and operating costs and other costs. Refrigerant prices were based on UNEP data and on data from international suppliers. He noted that a wide range of costs for all refrigerant fluids could be observed, with these varying according to whether they were for service (\$1- \$70/kg) or manufacture (\$<1 - \$60/kg). System component costs, such as for compressors, evaporators, condensers, piping/valves and safety features, in most cases had a 10 per cent uncertainty. Installation costs formed a complicated parameter, and therefore only qualitative indicators had been estimated. With regard to the production line conversion, overall there was a 10 per cent uncertainty across different refrigerant choices. Mr. Colbourne referred to different types of cost elements. Technician training required extra days for handling flammability, higher pressure and toxicity characteristics. Technician tooling related to new tools for handling flammability, higher pressure and different compatibility. For service and maintenance costs, there was a negligible difference for alternative refrigerants. Lastly, there could be a negligible difference in disposal costs, but these could be highly sensitive to local regulations. He said that, generally, it was not possible to estimate specific relative costs for each alternative. Costs were generally sensitive to parameters such as the type of product, the range of models, design options adopted for products and the charge quantity for existing models. Elements that could also be mentioned were the size of the enterprise, the extent of product development, the maturity of the product or option, the extent of internal components, the existing spread penetration and scale of the technology and the status of patents and licences. He concluded his presentation with the comment that the Task Force report provided tabulated relative cost data from a study on low-global-warming-potential alternatives to HFCs.

Mr. Lambert Kuijpers continued the presentation on the subject of the section replacements for HCFCs at high ambient temperatures, starting with stationary air conditioners at high ambient temperatures. For this mass-produced equipment, the refrigerant choice was based on a number of criteria, including cooling capacity at high ambient temperatures, energy efficiency, input power required, refrigerant global-warming potential, safety and costs. He said that R-410A, a blend of HFC refrigerants, was less efficient than HCFC-22 for ambient temperatures higher than about 45°C, providing figures for capacity and energy efficiency for both refrigerants. He also showed a table containing data for all possible alternative refrigerants for HCFC-22, even for those with low capacity. There were efficient candidates, including propane, ammonia and HFC-161, but all had limitations, because of flammability, toxicity, etc. He then moved on to the subject of commercial refrigeration at high ambient temperatures, where refrigerant choices were directly related to the cooling capacity and the evaporation temperature required. HFC-134a, which had a relatively low volumetric capacity, was still the preferred refrigerant for small equipment. HCFC-22 and R-404A, both having higher refrigeration capacities, were used in large commercial systems as well as in small systems with low evaporation temperatures. High ambient temperatures led to the choice of "medium pressure" refrigerants, such as HFC-134a (or HFC-1234yf in future) for low-capacity single-stage systems. Also in this subsector, propane was applicable only in smaller systems owing to safety concerns. Mr. Kuijpers said that, currently, there was a lack of low-global-warming-potential refrigerants with a large refrigeration capacity to replace R-404A or HCFC-22 in single-stage refrigeration systems and that cascade systems, with carbon dioxide used at the low evaporation temperature, and refrigerants such as HFC-134a, HFC-1234yf or HC-290 used at the high condensation temperature, were energy-efficient designs for high ambient temperatures.

Mr. Miguel Quintero, co-chair of the XXIII/9 Task Force, provided a brief description of the current situation in non-Article 5 parties and the current and emerging options to replace HCFCs in the Article 5 countries. There was no longer any HCFC consumption in non-Article 5 parties. The preferred blowing agents currently in use were hydrocarbons (HC), in particular pentanes - the

dominant technology - and saturated HFCs. Owing to safety considerations, in most cases the conversion to HC in small and medium-sized enterprises was not cost-effective, and saturated HFCs exhibited high unitary costs and global-warming-potential values greater than HCFC-141b, which constituted a barrier to the transition from HCFC in developing countries. He noted that there were other alternatives, such as oxygenated hydrocarbons (methyl formate, methylal) and improved CO₂ (water) based formulations that provided acceptable foam properties in integral skin foam and in rigid foam when a high thermal performance was not required. He concluded his presentation by saying that recent commercial scale trials with unsaturated HFCs, marketed as HFOs, had shown a 4 per cent improvement in terms of thermal efficiency over saturated HFCs. It was estimated that those substances would be available in the 2014-2015 period.

Mr. Verdonik, co-chair of HTOC, explained that when the first generation of halon alternatives had been developed and marketed in the early 1990s, HCFCs and their blends were only one of several options available to replace halon 1301 in total flooding applications and halon 1211 in local/streaming applications. He provided an estimate that the clean agent alternatives to halons, i.e., those that left no residue, which was an important property of halons, comprised about 51 per cent of the former halon market. Of that amount, HCFCs were used in approximately 1 per cent of applications – a very small percentage compared with other options. He explained that this was due to tradition within the fire protection community, market forces and costs compared with options such as carbon dioxide and not-in-kind alternatives. He provided information on the status of HCFC use, alternatives, environmental impacts and the costs of alternatives to HCFCs used in both total flooding and local/streaming applications. With regard to total flooding, he noted that only HCFC Blend A was still produced, but that its use was limited primarily to recharge of existing systems. He also explained that the term came from the time when the alternatives were initially being developed and the composition of the blends was considered proprietary. The United States Significant New Alternatives Policy (SNAP) programme had developed those terms. HCFC Blend A contained HCFC-22, -124, and -123. Mr. Verdonik indicated that the alternatives to HCFC Blend A included inert gases, HFCs and a fluoroketone (FK). He noted that from a fate and effects standpoint, the inert gases had no environmental impact, whereas they had an almost negligible environmental impact in terms of ozone-depleting and global-warming potential. With regard to the costs, he indicated that those alternatives were approximately one third more expensive than the two closest HFC alternatives and that the footprint of the cylinders necessary for the inert gases was three times greater than that of its competitors.

With regard to streaming applications, Mr. Verdonik noted that only HCFC Blend A, consisting of HCFC-123 with a small amount of perfluoromethane, was used in both non-Article 5 and Article 5 parties, with a market ratio of approximately four to one, respectively. He further indicated that HCFC Blend E, being mainly HCFC-123 with some HFC-125, and “neat”, or pure, HCFC-123 had some limited acceptance in some Article 5 parties. He explained that the HCFC- and HFC-based portable extinguishers, which would be clean agents, were typically 3 to 10 times more expensive than traditional options such as multipurpose dry powder, water and carbon dioxide for the same fire rating and performance. These clean agent alternatives were therefore used only where the cleanliness requirement warranted the much higher cost. He indicated that HCFC Blend B, being mainly HCFC-123, had low ozone-depleting potential, whereas its main clean agent alternative, HFC-236fa, has none. However, the climate impact of HFC-236fa was about 40 times greater than that of HCFC Blend B. He concluded his presentation by providing information on future options. The development and testing of alternatives continued and, with the single exception of aircraft cargo bays, there were alternatives to ozone-depleting substance fire suppressants for virtually every total flooding application once served by ozone-depleting substances. Those alternatives took the form of zero-ODP gases, gas-powder blends, inert gases and not-in-kind technologies. With regard to local/streaming applications, Mr. Verdonik stated that the unsaturated HBFC, known as 2-BTP, might turn out to be an effective substitute for HCFC Blend B if the remaining testing and commercialization tasks were successful.

Mr. Keiichi Ohnishi, member of the Task Force, gave a presentation on the solvent section, starting with an outline of the current market. He showed that over 90 per cent of ODS solvent uses had been reduced through conservation and substitution by not-in-kind technologies and that the remaining market was distributed over in-kind solvents. HCFCs were one of the in-kind solvents, and no single option could replace HCFCs completely. Mr. Ohnishi noted that aqueous, semi-aqueous, hydrocarbon and alcoholic solvents had been introduced as possible not-in-kind alternatives to replace HCFCs. He explained the drawbacks and advantages of their technologies, including their environmental effects, safety concerns and roughly estimated cost. As in-kind alternatives to HCFCs, chlorinated solvents, a brominated solvent, HFCs and HFEs had been introduced. He briefly listed their characteristics, environmental effects, safety concerns and rough cost evaluations. Unsaturated

HCFCs and HFCs (HFOs) had been introduced as new candidates. They had extremely low global-warming-potential values owing to their very short atmospheric life. They were expected to be commercially available within a few years.

VI. Presentation on the nomination and operational processes of the Technology and Economic Assessment Panel and its subsidiary bodies and other administrative issues (agenda item 9)

The three co-chairs – Ms. Bella Maranion, Ms. Marta Pizano, and Mr. Alistair McGlone – presented the report of the task force updating the nomination and operational processes of TEAP and its subsidiary bodies, pursuant to decision XXIII/10. Ms. Maranion gave a presentation on the composition of the task force, which comprised three co-chairs and six members, three from Article 5 parties and six from non-Article 5 parties. She noted that members were drawn from the previous decision XXII/22 task force, which had considered related issues on nomination guidelines and membership. She reviewed the mandate of the decision, which included requirements that could be incorporated directly into the revised terms of reference, such as terms of members' appointments to TEAP and its technical options committees and notification to national focal points of relevant parties for nominations. She also reviewed additional requests, including the request that TEAP continue to ensure balance in its membership, update its membership matrices of current and needed expertise, ensure clarity and standardize its process for nominations, draft recusal guidelines, draft guidance for the appointment of TEAP co-chairs and draft revised terms of reference. She reviewed the current matrix for needed expertise in the various technical options committees and the nomination and appointment roles for TEAP/technical options committees/temporary subsidiary bodies. She also presented the guidelines for the appointment of TEAP co-chairs.

Ms. Marta Pizano presented the current membership of the various technical options committees and considerations for future membership, including the four-year period of appointment. Mr. Alistair McGlone then provided an overview of the initial draft updated terms of reference, with proposed changes based on what would strictly be required to comply with the requirements of decision XXIII/10, although parties could take the opportunity to make further clarifications. He presented the guidelines for the recusal of members, which considered the requirements for annual disclosure of interest by members and processes related to conflict of interest. He also presented a proposal for an ethics advisory body that could address those issues, as well as the other operational procedures of the TEAP, identified in the deliberations of the task force, which could be further clarified and included the handling of minority reports and the challenges of consensus when remote meetings were held.
