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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-eighth Meeting
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**INFORMATION RELEVANT TO THE DEVELOPMENT OF THE COST GUIDELINES FOR
THE PHASE-DOWN OF HFCs IN ARTICLE 5 COUNTRIES: ENABLING ACTIVITIES**

Background

1. At their Twenty-eighth Meeting¹, the Parties to the Montreal Protocol adopted the Kigali Amendment², and adopted decision XXVIII/2 related to the amendment phasing down HFCs. In paragraph 20 of decision XXVIII/2 the Parties requested the Executive Committee to include the following enabling activities to be funded in relation to HFC phase-down:

- (a) Capacity-building and training for the handling of HFC alternatives in the servicing, manufacturing and production sectors;
- (b) Institutional strengthening (IS);
- (c) Article 4B licensing;
- (d) Reporting;
- (e) Demonstration projects; and
- (f) Development of national strategies.

2. In the context of agenda item 10 on Issues relevant to the Executive Committee arising from the Twenty-eighth Meeting of the Parties to the Montreal Protocol of the 77th meeting³, the Executive Committee discussed a note from the Secretariat aimed at seeking guidance from the Executive Committee on a way forward to address decision XXVIII/2. The Executive Committee also discussed how to deal with the additional voluntary contributions from a group of donor countries intended to finance activities for the implementation of the HFC phase-down.

¹ Kigali, Rwanda, 10 – 15 October 2016.

² Decision XXVIII/1, Annex I of document UNEP/OzL.Pro/28/12.

³ Montreal, Canada, 28 November – 2 December 2016.

3. Further to the discussion, the Executive Committee decided, *inter alia*, to hold a four-day special meeting early in 2017 to address matters related to the Kigali Amendment arising from decision XXVIII/2. The Executive Committee also requested the Secretariat to prepare an agenda for the meeting based on, *inter alia*, a document to be prepared by the Secretariat containing preliminary information on, among others, the enabling activities required to assist Article 5 countries in commencing their reporting and regulatory activities in relation to the HFC-control measures (decision 77/59(b)(ii)).

4. The Executive Committee further invited members at the 77th meeting to share relevant information with the Secretariat no later than 31 January 2017, owing to the limited time remaining before the end of 2016 (decision 77/59(c)).⁴

5. The Executive Committee also decided, *inter alia*, to accept, with appreciation, the additional contributions announced by a number of non-Article 5 Parties to provide fast-start support for the implementation of the Kigali Amendment. It was further decided that the additional contributions should be made available to Article 5 countries that had HFC consumption baseline years from 2020 to 2022, and had formally indicated their intent to ratify the Kigali Amendment and take on early HFC phase-down obligations in order to support their enabling activities, such as capacity-building and training in handling HFC alternatives, Article 4B licensing, reporting, and project preparation activities, taking into account, but not restricted to, relevant guidelines and decisions of the Executive Committee. The Committee requested the Secretariat to develop a document describing possible procedures for the above-mentioned countries to access the additional fast-start contributions for enabling activities (decision 77/59(d)(i), (ii), and (iii)).⁵

6. The Secretariat has developed the present document in response to the above elements of decision 77/59.

Scope of the document

7. Since the inception of the Multilateral Fund in 1991, the Executive Committee has developed policies and guidelines and has approved funding for the activities listed under paragraph 20 of decision XXVIII/2 to support the phase-out of controlled substances in Article 5 countries. For the preparation of this document, the Secretariat undertook a review of the decisions and guidelines relevant to enabling activities that have been adopted by the Parties and the Executive Committee that could serve as a framework for a sustainable, cost-effective and successful phase-down of HFC consumption and production in Article 5 countries. The information contained in this document could also assist the Executive Committee in deciding which enabling activities could be funded under the additional voluntary contributions of US \$27 million for fast-start action on the implementation of the Kigali Amendment for Article 5 countries that have HFC consumption baseline years from 2020 to 2022.

8. In reviewing this document, the Executive Committee might wish to consider the following information provided by Executive Committee members in response to decision 77/59(c).

⁴ Information was received from the Governments of Argentina, Germany, Japan and the United States of America. However, only the Governments of Germany and Japan submitted information related to the present document. The full text of the information received from the Executive Committee members is contained in Annex II of document UNEP/OzL.Pro/ExCom/78/1/Add.1 (Annotated provisional agenda).

⁵ The relevant document Procedures for Article 5 countries that have HFC consumption baseline years from 2020 to 2022 in accessing additional contributions for enabling activities could be found in UNEP/OzL.Pro/ExCom/78/10.

Japan

9. Regarding enabling activities, the Government of Japan believes that priority should be given in particular to: (a) capacity-building and training for handling HFC alternatives in the servicing, manufacturing and production sectors; (b) institutional strengthening; and (e) demonstration projects.

Germany

10. The Government of Germany indicated that the enabling activities were required to assist Article 5 countries in commencing their reporting and regulatory activities in relation to the HFC-control measures. According to decision XXVIII/2, the following activities would be eligible for funding: implementing HFC phase-down strategies and public awareness; data reporting; enforcement and customs training; servicing sector training and capacity building; and measures for the safe introduction of hazardous alternatives.

11. The Government of Germany recommends integrating funding for the servicing sector under the HCFC and HFC phase-down as soon as possible in order to support/facilitate early ratification and rapid phase-down of HFCs. Particularly, Article 5 countries need systems for import/export licensing, quotas, reporting, data collection, customs, amended regulations and new training for flammables, and the early introduction of low-GWP alternatives to reduce transition to high-GWP in the meantime.

12. In the HFC management strategy/plan, the Government of Germany would like to see the following issues being addressed:

- (a) Activities that will speed up phase-down and limit HFC growth most rapidly and effectively, taking into account the lifetime effects of alternatives at realistic leakage rates as established in the HPMPs (decision 72/41);
- (b) HFC Inventories: Methodologies for establishing baselines for both HFC and energy consumption in the refrigeration and air-conditioning (RAC) subsectors;
- (c) Seeking synergies when enabling: the servicing sector activities for capacity-building and training for HFC alternatives in the manufacturing and production sectors; the development of national strategies for a combined institutional HCFC and HFC management and support structure; and Article 4B on licensing and reporting;
- (d) Demonstration projects: How to identify key subsectors and select demonstration projects enabling HFC and HCFC management, controls and enforcement; funding could be linked to HCFC phase-out management plans (HPMPs);
- (e) Implementation: Ask countries to advise on which activities are particularly important for “fast start” phase-down action.

13. With regard to the guidelines for enabling activities, the Government of Germany noted that the Secretariat recommended using US \$27 million for enabling activities. The Government of Germany further noted that the Secretariat expects funding for HFC enabling activities to be similar to the funding required to cover HPMP development costs. If so, then very little money (if support costs are included) will be left to do anything other than enabling activities. Priority should be given to overcoming regulatory and other barriers, with the Executive Committee requesting bilateral and implementing agencies to submit funding proposals and prepare capacity assistance.

Introduction

14. Since the inception of the Multilateral Fund the activities listed under paragraph 20 of decision XXVIII/2 have been funded as stand-alone activities or as a component of sector or national phase-out plans (NPPs), and have not been defined as “enabling activities” as such.

15. “Enabling activities” were approved for the first time in the context of stage I of the HPMP in China⁶, where the Government of China developed a national enabling programme as an integral part of China’s overall strategy for compliance with the 2013 and 2015 control targets for HCFCs, which comprises three sub-components: capacity-building of national and local authorities; strengthening the import and export control of HCFCs; and a communications strategy.

16. In preparing this document, the Secretariat noted that the enabling activities listed in paragraph 20 of decision XXVIII/2 are related to several other elements of the decision. For example:

- (a) “Capacity-building and training for the handling of HFC alternatives in the servicing, manufacturing and production sectors” is related to: “costs of the safe introduction of flammable and toxic alternatives” for the consumption manufacturing sector (paragraph 15(a)(vi)); “certification programmes and training of technicians on safe handling, good practice and safety in respect of alternatives, including training equipment” for the servicing sector (paragraph 15(c)(iii)); and “capacity-building to address safety: to request the Executive Committee to prioritize technical assistance and capacity-building to address safety issues associated with low-GWP or zero-GWP alternatives” (paragraph 23);
- (b) “Institutional strengthening” is related to “institutional strengthening: to direct the Executive Committee to increase institutional strengthening support in light of the new commitments related to HFCs under the Amendment” (paragraph 21);
- (c) “Article 4B licensing” is related to: “policy development and implementation” for the servicing sector (paragraph 15(c)(ii)), as the development, strengthening and operation of the licensing (and quota) system is included therein; “training of customs officers” for the servicing sector (paragraph 15(c)(iv)), as one of the main objectives of the training programmes is to train customs officers and authorities in the operation of the import/export of controlled substances under the Montreal Protocol; and “prevention of illegal trade of HFCs” (paragraph 15(c)(v)); and
- (d) “Reporting” is related to “institutional strengthening” (paragraph 20(b) under “enabling activities” and paragraph 21), as data reporting under Article 7 of the Montreal Protocol to the Ozone Secretariat, and under the progress report on the implementation of the country programme (CP data) to the Fund Secretariat, is one of the key responsibilities of the National Ozone Unit (NOU) (supported through “institutional strengthening”).

Enabling activities as defined in decision XXVIII/2

17. Relevant decisions and current practice by the Parties and the Executive Committee related to the enabling activities listed under paragraph 20 of decision XXVIII/2 are presented below.

⁶ UNEP/OzL.Pro/ExCom/64/29. The Agreement between the Government of China and the Executive Committee for the phase-out of HCFC consumption included a section on “Funding service sector plan, including enabling programme” (page 5 of Annex XXVII of document UNEP/OzL.Pro/ExCom/64/53).

Capacity-building and training for handling HFC alternatives in the servicing, manufacturing and production sectors

Previous Executive Committee decisions and practice

18. Since the 4th meeting (June 1991), the Executive Committee has approved funding for capacity building and training for handling alternatives to ODS, mainly CFCs and HCFCs, in the manufacturing and servicing sectors. Funding for similar activities has also been approved for the introduction of alternative technologies to the use of methyl bromide as a soil fumigant and as a fumigant for commodities and structures.

19. The majority of the training programmes were implemented at the country level, mainly as stand-alone activities up to the 23rd meeting (November 1997), where the refrigerant management plans (RMPs) for five low-volume-consuming (LVC) countries⁷ were approved. Since then, training programmes have been incorporated into sector plans (e.g., terminal phase-out management plans (TPMPs) for LVC countries), NPPs, and HPMPs. These training programmes have addressed the training needs of two groups of stakeholders:

- (a) Customs officers and law enforcement officers on the legislation and regulations issued at the country level to phase out controlled substances under the Montreal Protocol, including the implementation of mandatory import/export licensing systems (under Article 4B of the Montreal Protocol) and associated quota systems; and
- (b) Refrigeration service technicians on good servicing practices, including proper handling of alternative refrigerants, recovery and recycling of refrigerants, and, to a lesser extent, retrofitting of refrigeration equipment to non-ODS-based refrigerants.

20. Other characteristics of training provided under the Multilateral Fund include:

- (a) Training as a funded component of investment projects for the conversion to alternative technologies used in the manufacturing of equipment (e.g., RAC equipment), products (e.g., foams or aerosols), and/or processes (e.g., cleaning equipment with non-ODS based solvents) where engineers and technicians at the enterprise level have been trained in the operation of the alternative technology phased in and the associated equipment; and
- (b) Regional training programmes, addressing issues related to, *inter alia*, policy development, training for extension workers, and sector-specific training in the foam, halon, refrigeration and solvent sectors; and global training programmes for a number of topics that have been approved since the 6th meeting (February 1992).

21. Capacity-building (excluding direct funding support to NOUs, which is considered under “institutional strengthening”) has also been provided at the regional and global levels, mainly through the Compliance Assistance Programme (CAP) of United Nations Environment Programme (UN Environment). Capacity-building for ozone officers and key stakeholders on a broad range of topics has been strengthened since the approval of the first regional network of ozone officers at the 9th meeting (March 1993). Regional network meetings are conducted on an annual basis. The Executive Committee may wish to note that at their Twenty-eighth meeting, the Parties requested the Executive Committee of the Multilateral Fund to consider maintaining or, if required, increasing the Fund’s technical and capacity-building assistance, in particular through the UN Environment Compliance Assistance Programme, with a view to improving cooperation between national authorities in charge of implementation of the Montreal Protocol and national and regional standards committees (paragraph 6 of decision XXVIII/4).

⁷ Bahamas, Georgia, Guyana, Saint Lucia and Trinidad and Tobago.

22. Several of the alternative technologies that were phased in as replacements of ODS in all the manufacturing and refrigeration servicing sectors were flammable and/or toxic. In all those cases, safety related equipment was provided as an eligible incremental cost, and the capacity-building and training programmes took fully into account safety issues associated with the alternative technology (in line with paragraph 23 of decision XXVIII/2⁸). Previous Executive Committee decisions and practice related to the safe introduction of flammable and toxic alternatives is further discussed in the document on Information relevant to the development of the cost guidelines for the phase-down of HFCs in Article 5 countries: draft criteria for funding.⁹

Potential activities to facilitate HFC phase-down

23. In the context of the HFC phase-down, the following activities may be considered:

- (a) Training for customs and enforcement officers addressing the obligations under the Kigali Amendment would need to be developed and included in the training programmes implemented in all Article 5 countries;
- (b) HFCs are more extensively used in RAC applications as compared to HCFCs, noting that a significant proportion of HFC consumption is expected from blends. Alternative technologies to HFCs for several applications that are becoming commercially available in Article 5 countries are mildly flammable, flammable or toxic, and their introduction would require adoption of (national or international) standards, revision of codes of practice, revision of regulations and/or technical norms, and enforcement and awareness of such standards;
- (c) Training programmes for refrigeration technicians in Article 5 countries would need to be extensively revised to address the issue of flammability and/or toxicity of refrigerants being phased in, noting that training programmes have a direct impact on reduction of emission of refrigerants into the atmosphere and on reduction of energy consumption based on improved energy efficiency in well-maintained and well-serviced RAC equipment; and
- (d) Early introduction, adoption and/or optimization of low-GWP alternative technologies in markets prevailing in Article 5 countries could avoid the replacement of HCFC-based technologies with high-GWP HFC-based technologies, thus reducing the future consumption and production of HFCs.

Institutional strengthening (IS)

24. IS support for Article 5 countries has been discussed since the 5th meeting (November 1991), when the Executive Committee, *inter alia*, recognized that providing support for IS to an Article 5 country might, in some cases, be an essential element in achieving the objectives of the Multilateral Fund and the Montreal Protocol¹⁰. The main objective of IS was to provide necessary resources to enable Article 5 countries to strengthen a mechanism within their countries to facilitate expeditious and effective implementation of ODS phase-out projects, ensuring liaison between the country concerned, the Executive Committee, the Fund Secretariat and the implementing agencies.¹¹ At the same meeting, funding for IS was approved for the first time on the basis of a document on IS, which gave indicative

⁸ To prioritize technical assistance and capacity building to address safety issues associated with low-GWP or zero-GWP alternatives.

⁹ UNEP/OzL.Pro/ExCom/78/5.

¹⁰ Paragraph 28(d) of UNEP/OzL.Pro/ExCom/5/16.

¹¹ Paragraph 74 of UNEP/OzL.Pro/ExCom/7/30.

ceilings and categories of funding, and elements of the financial support¹². Since then, the Executive Committee has approved approximately US \$131 million (including support costs) for IS projects in 145 Article 5 countries.

25. While IS is included in paragraph 20 of decision XXVIII/2 as an enabling activity, under paragraph 21 of the same decision, the Parties “directed the Executive Committee to increase IS support in light of new commitments related to HFCs under this amendment.”

26. Considering the relevance of the IS for the implementation of the Montreal Protocol, and the number of decisions adopted by the Executive Committee, a discussion of IS in the context of the Kigali Amendment and decision XXVIII/2 is presented in the document on Information relevant to the development of the cost guidelines for the phase-down of HFCs in Article 5 countries: institutional strengthening.¹³

Article 4B of the Montreal Protocol (licensing)

Previous Executive Committee decisions and practice

27. Article 4B of the Montreal Protocol requires that each Party establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annexes A, B, C and E of the Montreal Protocol. Since the adoption of the Protocol, the Parties and the Executive Committee have adopted a series of decisions to fund activities to enable Article 5 countries’ compliance with their obligations related to Article 4B, as summarized in Annex I to the present document.

28. With regard to Article 4B of the Montreal Protocol, the Kigali Amendment inserted the following text after paragraph 2: “Each Party shall, by 1 January 2019 or within three months of the date of entry into force of this paragraph for it, whichever is later, establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annex F. Any Party operating under paragraph 1 of Article 5 that decides it is not in a position to establish and implement such a system by 1 January 2019 may delay taking those actions until 1 January 2021.”

29. One of the outstanding issues related to the development of a licensing system for HCFCs is that their replacements include HFCs where global trade is expected to grow, yet these were not included in the existing Harmonized Commodity Description and Coding System (Harmonized System) developed and maintained by the World Customs Organization, which made it difficult for customs authorities to recognize the illegal nature of the relevant import or export of HCFCs if declared as HFCs. The Twenty-sixth Meeting of the Parties (November 2014) therefore requested the Ozone Secretariat to liaise with the World Customs Organization to examine the possibility of designating individual Harmonized System codes for the most commonly traded fluorinated substitutes for HCFCs and CFCs classified under Harmonized System code 2903.39, and encouraged parties to take the necessary steps to recommend such international customs classifications and consider establishing domestic customs codes for the relevant substitutes (decision XXVI/8).

Potential activities to facilitate HFC phase-down

30. In the context of HFC phase-down, Article 5 countries may need to strengthen their policy and regulatory infrastructures, and review, update and/or further develop legislation (as required), including import/export licensing and quota systems to include HFCs, and report these systems to the Ozone Secretariat in line with Article 4B of the Protocol. The early establishment of such policies would facilitate the early ratification of the Kigali Amendment. Article 5 countries that wish to ratify before

¹² IS projects were approved for Chile, Jordan and Mexico

¹³ UNEP/OzL.Pro/ExCom/78/7.

2019 would need to establish a licensing system by 2018 in order to satisfy reporting requirements needed after three months of becoming a Party.

Reporting

Previous Executive Committee decisions and practice

31. Parties to the Montreal Protocol are required to report under Article 7, data on controlled substances on an annual basis to the Ozone Secretariat. In addition, Article 5 countries are required to report data on controlled substances by sector and subsector under the CP data to the Fund Secretariat. This section of the document presents key decisions on data reporting by Article 5 countries relevant to the HFC phase-down; other relevant decisions on data reporting are summarized in Annex II to the present document.

Article 7 data

32. Article 7 of the Montreal Protocol requires that each Party shall provide to the Ozone Secretariat, within three months of becoming a Party, statistical data (or the best possible estimates of such data where actual data are not available) on its production, imports and exports of each of the controlled substances in Annexes A, B, C and E including amounts used for feedstocks, the amounts destroyed using technologies approved by the Parties, and, imports from and exports to Parties and non-Parties respectively; and for substance listed in Annex E the amounts used for quarantine and pre-shipment applications. Data reported under Article 7 was used to calculate baseline consumptions for the controlled substances, as well as determine a Party's compliance with the provisions of the Protocol.¹⁴

33. The adoption of the Kigali Amendment at the Twenty-eighth Meeting of the Parties added Annex F to the Montreal Protocol, which added 18 HFCs as controlled substances. As the consumption of HFCs in blends is likely to be significant in many countries, it is important that countries initiate actions to develop methodologies to collect data on HFC consumption (including HFC-blends), noting that new reporting formats may be agreed upon by the Meeting of the Parties. Those Article 5 countries that had completed surveys of ODS alternatives, which included HFCs, may adapt these data collection approaches used during the surveys in order to facilitate data reporting.

Country programme (CP) data

34. CP data reporting was initiated at the 5th meeting (November 1991). Since then, CP data helped assess the prospects of Article 5 countries in their efforts to comply with one or more of the control measures in the Montreal Protocol, has been used to identify ODS yet to be addressed by actions supported by the Multilateral Fund, and has been a pillar for the implementation of projects and activities in all Article 5 countries assisted by the Multilateral Fund.

35. Article 5 countries are required to submit CP data on an annual basis, to include information on all ODS including HCFCs. CP data provides best estimates of use by sector, as well as information on imports of these substances. The CP data reporting format is approved by the Executive Committee and revised accordingly when new substances are included or where consumption data for some substances are not required anymore (i.e. CFCs/CTC), with the last revision made at the 63rd meeting (April 2011) (decision 64/4(b)(ii)).

¹⁴ Article 8 of the Protocol on Non-compliance, requires that The Parties, at their first meeting, shall consider and approve procedures and institutional mechanisms for determining non-compliance with the provisions of this Protocol and for treatment of Parties found to be in noncompliance.

36. At its 76th meeting (July 2016), the Executive Committee also decided to consider revising the CP data report format at a future meeting, on the basis of the outcome of the surveys of ODS alternatives and the discussions on the HFC amendment (decision 76/7(c) and (d)).

Potential activities to facilitate HFC phase-down

37. In the context of the HFC phase-down, data reporting both for Article 7 and CP would take on particular significance especially for those Article 5 countries that wish to move for an early ratification of the Kigali Amendment, as the methodology and formats for reporting may change with the new requirements for HFCs. In this regard, the Executive Committee may wish to note the World Customs Organization, through its Harmonized Review subcommittee and the Scientific subcommittee, considered the request of the Parties in decision XXVI/8 to designate individual HS codes for most common HFCs. In December 2016 there was unanimous agreement to amend relevant nomenclature for consideration by the full Harmonized Review Committee at its next meeting, 20-24 March 2017. If approved, the new nomenclature will be referred to the World Customs Council, which is expected to meet in October or November 2017, for final approval. While the new HS codes would in that case enter into force on 1 January 2022, governments can start applying in the interim the new codes any time after the final approval by the Council. The following activities may then be taken on priority:

- (a) Reporting consumption, production, and emissions (where applicable) of HFCs controlled under the Kigali Amendment would need to be initiated, noting that harmonized customs codes for these substances have been considered by the World Customs Organization but have not yet received final approval; and
- (b) Data collection, verification and reporting methodologies and approaches would need to be further developed, noting that harmonized customs codes for HFCs have yet to be finalized; that several of the HFCs are used in blends rather than pure substances; that emissions of HFC-23 would need to be addressed; and that new reporting formats under Article 7 may need to be developed and agreed by the Parties and that CP data reporting requirements will also need to be revised and considered by the Executive Committee.

Demonstration projects

Previous Executive Committee decisions and practice

38. The Multilateral Fund has funded demonstration projects in the past, often to facilitate the adoption and/or optimization of cost-effective and available technologies under the local conditions prevailing in Article 5 countries. The first demonstration project was approved at the 5th meeting (November 1991) for CFC recovery and recycling. Since then, the Executive Committee has approved 136 demonstration projects at a total value of US \$70.9 million (including agency support costs).

39. The Executive Committee has also approved specific funding windows for demonstration projects for the phase-out of methyl bromide, chiller projects, ODS waste management, and low-GWP alternative technologies to HCFCs. A brief description of the funding windows for demonstration projects is contained in Annex III to the present document. Given the relevance to the phase-down of HFCs of the projects to demonstrate low-GWP alternative technologies to HCFCs, a description of those projects is presented below, with further details provided in Annex III.

Projects to demonstrate low-GWP alternative technologies¹⁵

40. At its 55th meeting (July 2008), the Executive Committee, in the context of initiating the phase out of HCFCs and within the framework of cost considerations of the HCFC phase-out, invited bilateral and implementing agencies to prepare and submit project proposals for HCFC uses in the foam sector including systems houses and/or chemical suppliers for the development, optimization and validation of chemical systems for use with non-HCFC blowing agents, and a limited number of demonstration projects in the RAC sub-sectors to low- GWP technologies to identify all the steps required and to assess their associated costs. A total of 14 demonstration projects were approved at a total value of US \$17,864,172 (the list of these projects is contained in Annex III to the present document).

41. The demonstration projects approved in line with decision 55/43 have been completed and have provided an independent assessment of alternative technologies through an analysis of their performance and costs under local conditions prevailing in Article 5 countries. The results have been documented in the final reports submitted to the Executive Committee, and also disseminated through workshops attended by government and industry representatives from the regions where the demonstrations have taken place. These proposals have shown how alternative technologies perform and facilitated the collection of accurate technical data on the application of alternative technologies, and have increased know-how in terms of alternative technologies, as their concepts or approaches were concretely described and justified in the initial proposals

42. The projects identified the following barriers to broader penetration of the alternative technologies:

- (a) For the foam sector: the lack of clarity on the side of users about how to gain access to the technology and the associated costs (i.e., possible licenses, royalties or technology transfer fees); lack of know-how in the application of the technologies by many users; lack of availability of the alternative blowing agent and compatible components on the local market; and the high operating costs of some alternative technologies. In several Article 5 countries (mostly LVCs) the lack of local systems houses limited the introduction of a viable technology that complies with availability, cost, performance, safety and environmental requirements, particularly with small and medium-sized enterprises (SMEs) and with spray foam applications; and
- (b) For the RAC sector: the use of flammable refrigerants requires assessing the procedures used for storage, transportation, servicing and disposal of RAC systems. The lack of standards on good practices for the use of flammable substances blocks market access for systems based on those technologies

43. Based on the successful completion of these projects, several of the demonstrated technologies have been incorporated into HPMPs, with the following examples:

- (a) The validation project for the use of methyl formate in several PU foam applications has led to the introduction of this technology in 12 Article 5 countries, involving more than 15 local systems houses and hundreds of downstream users with an aggregated consumption of approximately 5,000 metric tonnes (mt) of HCFC-141b;

¹⁵ The information in this section of the document has been extracted from the Overview of approved HCFC demonstration projects and options for additional projects to demonstrate climate-friendly and energy-efficient alternative technologies to HCFCs (decision 71/51(a)) (UNEP/OzL.Pro/ExCom/72/40), and section c (Projects to demonstrate low-GWP technologies pursuant to decision 72/40) of the Overview of issues identified during project review (UNEP/OzL.Pro/ExCom/76/12).

- (b) The project for room air-conditioners using HC-290¹⁶ (propane) has led to the use of HC-290 as an alternative for HCFC-22 in the room air conditioner sector plan of China under both stage I and stage II of the HPMP. Once completed, those projects will result in the conversion of 18 lines with consumption of approximately 7,300 mt for stage I and a further 20 lines with consumption of 8,050 mt; in addition, three compressor manufacturers have been converted to HC-290 technology under stage I and a further three will be converted under stage II; and
- (c) The project for the use of HFC-32¹⁷ has led to the introduction of this technology as an alternative for HCFC-22 in the industrial and commercial refrigeration and air-conditioning (ICR) sector plan of China, where conversions at 10 enterprises with an aggregated consumption of approximately 4,143 mt have been implemented in stage I of the HPMP. In addition, two compressor manufacturers have converted to HFC-32 technology. In stage II of the HPMP, HFC-32 has been selected as an alternative to HCFC 22 in unitary air-conditioning sub-sector with a planned phase-out of 3,150 mt, and one compressor line is expected to convert to HFC-32 technology. HFC-32 has also been selected in Indonesia, where three refrigeration and five air-conditioning equipment manufacturers using more than 550 mt of HCFC-22 are currently converting to HFC-32. Similarly, this technology has been introduced in Algeria (8.3 mt of HCFC-22), and in Thailand (1,036 mt of HCFC-22).

44. Several projects have also been approved for systems houses to customize formulations using new and emerging low-GWP alternative technologies (including HFOs, methyl formate and methylal) to supply a large number of downstream users, many of them SMEs. For example, stage I of the HPMPs for Brazil, China, Egypt, India, the Islamic Republic of Iran, Malaysia, Mexico, Nigeria, Saudi Arabia, South Africa and Thailand have included projects to assist locally-owned systems houses in introducing low-GWP alternative formulations. Some of these projects include direct assistance to local downstream-users, as well as, in other countries (e.g., Costa Rica, El Salvador, Jamaica and Trinidad and Tobago), to facilitate the transition to alternative technologies. In the case of China, systems houses will supply HC pre-blended polyols to enterprises that cannot establish HC storage and pre-blending stations in situ due to financial, safety and technical reasons. In Malaysia, four systems houses have already developed and tested one formulation based on methyl formate, while two of them have also developed one formulation based on HFO-1233zd. In Mexico, 10 local systems houses have already fully developed formulations based on methyl formate (and some on methylal and pre-blended HCs), which are being tested in downstream users and being made commercially available. In South Africa, the first six downstream users supported by their systems houses have converted to methyl formate.

45. In addition, the following demonstration projects have also been undertaken as part of stage I and stage II of HPMPs, or through other projects:

- (a) Promoting low-GWP refrigerants for air-conditioning sectors in high-ambient temperature countries in West Asia, where air-conditioning constitutes more than 50 per cent of the energy demand. This project is designed to address the challenges related to the availability of long-term low-GWP alternative refrigerants; technical issues including final products, components, and accessories; assess relevant energy efficiency standards and codes; and identify opportunities for facilitating the transfer of low-GWP technologies;

¹⁶ Demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air Conditioner Manufacturer Company, approved at the 61st meeting.

¹⁷ Demonstration project for conversion from HCFC-22 technology to HFC-32 technology in the manufacture of commercial air-source chillers/heat pumps at Tsinghua Tong Fang Artificial Environment Co. Ltd., approved at the 60th meeting.

- (b) District cooling in Colombia and Maldives¹⁸ associated with ODS phase out plans in these countries. The district cooling project in Colombia emerged from the demonstration project for integrated management of the centrifugal chiller sub-sector, focusing on energy-efficient CFC-free technologies for replacement of CFC-based chillers approved at the 47th meeting (November 2005); the project is expected to generate at least 31 per cent of energy savings compared to standard centrifugal chillers and reduce about 35 per cent of CO₂-eq emissions per year. The district cooling project in the Maldives, was a feasibility study that examined approaches to replace HCFC- and HFC-based air-conditioners by not-in-kind technologies (e.g., vapor absorption, deep seawater cooling, tidal and other systems), using different energy sources (e.g., waste heat, steam, direct heat, electricity) and its associated costs, which are potentially more energy efficient and have a lower carbon footprint than HFC technologies;
- (c) Demonstration of HCFC alternative technologies in the refrigeration servicing sector and end-users. Several HPMPs proposed pilot projects to: demonstrate and assess the performance of emerging technologies in RAC systems (e.g., Chile, Georgia, Kenya, Mexico (stage II), and Turkey); facilitate production of alternatives (e.g., Nigeria); or facilitate the development of standards for the use of flammable alternative technologies (Ghana, Georgia, Indonesia, Kenya, Kuwait, Mexico (stage II) and Oman). For example:
- (i) Stage I of the HPMP for Chile included a programme to demonstrate low-GWP and high energy-efficiency technologies in the supermarket sector (which consumes 45 per cent of the total HCFC-22 used in the servicing sector), and tackle technical and cost issues related to the lack of expertise and unavailability of components needed to implement these technologies;
- (ii) Stage II of the HPMP for Mexico included a demonstration project to distribute 1,000 new HC air-conditioning units on a pilot basis to specific users willing to assist the Government in collecting the necessary data on energy use and functioning of the system during a 12 month-period. Data on emission reductions and energy performance will be used for different purposes;
- (iii) Stage I of the HPMP for Nigeria included a demonstration project to establish a facility for locally produced refrigerant-grade HCs, demonstrate the production and safe use of HCs in refrigeration servicing applications, and training to ensure that the use of HC would occur in a safe way; and
- (iv) Stage I of the HPMP for Turkey included activities to demonstrate the conversion of refrigeration systems in supermarkets to low-GWP technologies (i.e., CO₂, ammonia, HC) with the objective of gaining commitments from larger end-users to stop using HCFC-22.

46. At the 75th and 76th meetings, the Executive Committee, in response to decision XXV/5¹⁹, approved an additional 18 project proposals to demonstrate low-GWP technologies, at a total funding of

¹⁸ The feasibility study is funded by the Climate and Clean Air Coalition.

¹⁹ To request the Executive Committee to consider the information in the TEAP report with a view to considering whether additional demonstration projects to validate whether low-GWP alternatives and technologies, together with additional activities to maximize the climate benefits in the HCFC production sector, would be useful in assisting Article 5 parties operating in further minimizing the environmental impact of the HCFC phase-out.

US \$18,028,551 (including agency support costs). These additional proposals for demonstration projects for low-GWP alternatives to HCFCs were considered using specific criteria²⁰ for project selection.

Potential activities to facilitate HFC phase-down

47. In the context of HFC phase-down, the results of several of the projects to demonstrate alternative technologies to HCFC could be applicable to substitute HFC-based technologies. For example, the reduced HFO formulations for the production of foam could be a cost-effective alternative for HFC-245fa foam formulations. In addition, the Executive Committee may wish to note that in selecting suitable demonstration projects for the HCFC phase-out, the Committee considered a number of criteria, including the level of consumption of HCFCs in the technology to be demonstrated. There may be sectors and technologies with relative small consumption of HCFCs but with consumption of high-GWP HFCs that may be suitable for demonstration projects (e.g., commercial refrigeration).

Development of national strategies

Previous Executive Committee decisions and practice

48. National strategies have been the basis for assisting Article 5 countries in phasing out ODS, with the first and most important being the country programme. Other relevant national strategies include RMPs mainly for LVC countries, followed by TPMP also mainly for LVC countries. Towards the end of the 2010 compliance-target period for CFCs, performance-based phase-out plans were approved for non-LVC countries to address the remaining consumption of CFCs, mostly used in the refrigeration servicing sector (although several NPPs included the remaining consumption in the manufacturing sector). Subsequent to decision XIX/6 on accelerated phase-out of production and consumption of HCFCs, phase-out activities in Article 5 countries were addressed through HPMPs. A brief analysis of these national strategies is presented below, with further details provided in Annex IV to the present document.

Country programme

49. Country programmes have been part of the mechanism for funding ODS phase-out since the Interim Financial Mechanism was established at the Second Meeting of the Parties (June 1990). Specifically, the terms of reference of the Executive Committee approved by the Parties, included to “consider and, where appropriate, approve country programmes for compliance with the Protocol and, in the context of those country programmes, assess and, where applicable, approve all project proposals or groups of project proposals where the agreed incremental costs exceed US \$500,000.”

²⁰ The following criteria was applied in project selection: the project offered a significant increase in current know-how in terms of a low-GWP alternative technology, concept or approach or its application and practice in an Article 5 country, representing a significant technological step forward; the technology, concept or approach had to be concretely described, linked to other activities in a country and have the potential to be replicated in the medium future in a significant amount of activities in the same sub-sector; for conversion projects, an eligible company willing to undertake conversion of the manufacturing process to the new technology had been identified and had indicated whether it was in a position to cease using HCFCs after the conversion; the project proposals should prioritize the RAC sector, not excluding other sectors; they should aim for a relatively short implementation period in order to maximize opportunities for the results to be utilized for activities funded by the Fund as part of their stage II of HPMPs; the project proposals should promote energy efficiency improvements, where relevant, and address other environmental impacts. The Committee also invited bilateral and implementing agencies to provide proposals for feasibility studies, including business cases for district cooling; the resulting studies should assess possible projects, their climate impact, economic feasibility and options for financing such undertakings, and the studies should enable stakeholders to understand the advantages and challenges as compared to business as usual (decision 72/40).

50. Country programmes are expected to contain a review of recent production, imports, applications and use of controlled substances by the main producers, users, and consumers (where information is available it would be useful to indicate links to multinational producers or users); a description of the institutional framework governing controlled substances (e.g., Government agencies, collaborating non-governmental organizations, consumer groups, industry associations); a description of policy framework, regulatory and incentive systems; a description of government and industry activities in response to the Protocol; a statement of strategy for implementation of the Protocol, indicating the respective roles of Government, supporting multilateral and bilateral agencies; an action plan encompassing investment and technical assistance projects, pre-investment studies, and any additional policy analysis required; a timetable for each activity, and for action plan review; and a budget and financing programme for the above activities.

51. The country programme served as basis for project preparation and further co-operation between the Party and the implementing agencies; it was not a funding document *per se*, but rather was a statement of the overall strategy that an Article 5 country wished to take to phase out ODS. While the approval of a country programme was a requirement for the approval of project proposals, in some instances, the Executive Committee also approved projects and activities for phasing out ODS during the preparation of country programmes.

Refrigeration management plans (RMPs)/Terminal phase-out plans (TPMPs)

52. Up until the 22nd meeting (May 1997), ODS phase-out was achieved through the submission of stand-alone investment projects. In considering the needs of LVC countries with approved country programmes to take near-term action to meet the CFC freeze, the Executive Committee requested them to submit RMPs²¹ based on the draft guidelines contained in decision 23/15.

53. RMPs were expected to address a country's particular circumstances and all relevant sectors including the informal sector that were still using ODS, especially CFCs, and included all or some of the following elements: a training programme for refrigeration technicians; recovery and recycling system; a training programme for customs officials; and an improved system for collection and monitoring and control of consumption of ODS refrigerant.

54. Several decisions were also taken by the Executive Committee at subsequent meetings in order to be more responsive to the needs of LVC countries, and other non-LVC countries with regard to activities in the RAC servicing sector, and to the nature by which the activities in the other remaining sectors evolved, as well as to reorient the approach to RMPs to better facilitate compliance. The full texts of the relevant decision could be found in Annex IV to the present document.

55. One result of these decisions was the shift from the development of an RMP to a TPMP, which was expected to contain the remaining activities that an Article 5 country needed to implement the total phase out of CFCs, with specific requirements and conditions that a country needed to fulfil before consideration by the Executive Committee (e.g., presence of a licensing system, commitment of the Government to completely phase out CFCs, and annual reporting and monitoring of activities).

56. At its 49th meeting (July 2006) the Executive Committee considered a document containing a Compendium of recommendations relevant to the evaluation of RMPs and NPPs in non-LVC countries,²²

²¹ The objective of a RMP is to develop and plan a strategy that will manage the use and phase-out of CFC refrigerants for servicing RAC equipment. The RMP is a critical management tool for LVCs for a smooth transition to non-ODS refrigerants, and will contribute to the country's phase-out of ODS by identifying all the activities required, describing all the Government measures that will be necessary to ensure the success of projects and planning how all these activities will be implemented over time.

²² UNEP/OzL.Pro/ExCom/49/7.

prepared by the Senior Monitoring and Evaluation Officer pursuant to decision 48/10.²³ The evaluation of RMPs and TPMPs resulted in actions and additional guidance to NOUs and implementing agencies regarding the considerations to be taken into account when planning and implementing RMPs, NPPs or TPMPs. These included cooperation with other government agencies within the country, updating legislative measures, requiring mandatory certification of technicians, and taking into account decision 41/100 for the recovery and recycling part of NPPs, among other things. With regard to training, the decision addressed the need to update training to include the latest information with regard to application of good practices to significantly reduce usage of ODS and to promote the use of alternatives, and paying full attention to safety aspects and the necessary modification or replacement of electrical components in countries where training in the use of hydrocarbons was carried out. In the decision, the Executive Committee also requested the Secretariat, in cooperation with bilateral and implementing agencies, to develop recommendations for indicative lists of appropriate equipment for the main target groups and share information about competitive suppliers, including from Article 5 countries (decision 49/6) (the full text of the decision can be found in Annex IV to the present document).

Performance-based phase-out plans

57. At the 35th meeting (December 2001), the Executive Committee adopted the adjusted funding policies of the Multilateral Fund²⁴, and emphasized greater government responsibility for managing national phase-out programmes, as well as the demonstrated relevance of projects defined as a direct, and, if applicable, quantifiable linkage between the funded activities and meeting the specific Montreal Protocol control measures. The Committee also requested the Secretariat to work with members of the Executive Committee, and the bilateral agencies and implementing agencies to develop draft guidelines for the preparation, implementation and management of performance-based substance-wide and national phase-out agreements (decision 35/56(a) and (b)).

58. One key element of the adjusted funding policies of the Multilateral Fund was the notion that the Fund's goal would have to shift toward assisting individual Article 5 countries to implement time-bound compliance targets, which would necessitate an adjustment from emphasizing the impact of individual projects to putting greater emphasis on the demonstrated relevance of such projects to compliance²⁵, as "funding must be predicated on a commitment by the country to achieve sustainable, permanent aggregate reductions in consumption and production, as relevant." Depending on the preference and readiness of the country concerned, two modalities were proposed to implement the adjusted funding policy: funding of performance-based group-wide phase-out agreements; and funding of individual projects or stand-alone sector phase-out plans based on national phase-out strategies. These two modalities are contained in Annex IV to the present report.

59. In line with decision 35/56, the Executive Committee approved the guidelines for the preparation, implementation and management of performance-based sector and national ODS phase-out plans, on the understanding that the purpose of the guidelines was to provide general principles and procedures that should be followed in developing and implementing performance-based ODS phase-out plans; and that the guidelines did not apply to already approved performance-based sectoral and national ODS phase-out plans in any regard (decision 38/65).²⁶

²³ The Executive Committee noted with appreciation the final report on the intermediate evaluation of RMPs and national phase-out plans in non-LVC consuming countries focusing on the refrigeration servicing sector contained in document UNEP/OzL.Pro/ExCom/48/12; and requested the Senior Monitoring and Evaluation Officer to develop a comprehensive and categorized compendium of recommendations relevant to that evaluation, distinguishing between new recommendations and those that had already been approved by the Executive Committee.

²⁴ Annex XVI of document UNEP/OzL.Pro/ExCom/35/67.

²⁵ Defined as a direct and, if applicable, quantifiable linkage between the funded activities and the specific Montreal Protocol compliance target to be achieved.

²⁶ The guidelines are contained in document UNEP/OzL.Pro/ExCom/38/57/Rev.1.

HPMPs

60. As a result of accelerating the phase out of HCFCs, the Executive Committee, at its 53rd meeting (November 2007), considered a document on “Options for assessing and defining eligible incremental costs for HCFC consumption and production phase-out activities (follow-up to decision 52/4²⁷)”²⁸ where it noted that the Multilateral Fund has funded two similar exercises: the country programming and the preparation of sector/NPPs, and introduced guidelines for each of them. National surveys have always been an integral part of each of these exercises and provide the factual basis for the planning exercises. The country programming exercise took place for most countries at the early stages of funding of the CFC phase-out activities in a country and prior to the establishment of the CFC baseline. The process assisted the countries in building consensus on the national phase-out plan of action.

61. This formed the basis for the development of guidelines for the preparation of HPMPs, where a staged approach was proposed to allow countries to develop an overarching plan to achieve total phase-out, primarily by allowing for concrete proposals to achieve the first two HCFC control measures in 2013 and 2015, while at the same time allowing countries to propose a subsequent stage, or stages if needed, to manage their HCFC phase-out. The full text of the guidelines is attached in Annex IV to the present document.

62. At the time of deciding these guidelines, the Executive Committee acknowledged the importance of performance-based funding where a commitment to a maximum fundable consumption ceiling for each country, with annual linear reduction steps, was matched with a funding commitment agreed in principle from the Fund. It also noted the importance of timing, where the planning for HCFC phase-out was similar to the country programming exercise, since it took place at the beginning of the phase-out programme and most likely prior to establishing the baseline. The Committee also recognised the uncertainties both in terms of availability of substitutes and knowledge of their costs, therefore opting for a phase-out strategy based on a phased implementation approach, taking on sectors where substitute technologies are more developed and new technologies become available.

Potential activities to facilitate HFC phase-down

63. In the context of HFC phase-down, and noting that in the past, the early preparation of overall national strategies have assisted Article 5 countries to develop a comprehensive plan to meet their compliance obligations, assistance may be provided to initiate data collection, develop institutional arrangements, and consultations leading to the development of national HFC phase-down strategies.

64. The Executive Committee may also consider the effective modality for national strategy development for Article 5 countries most suitable for HFC phase down as cost guidelines are reviewed.

Other enabling activities that have been funded

65. While assistance from the Multilateral Fund has not been directly provided to Article 5 countries to ratify the Vienna Convention, the Montreal Protocol, and the four amendments to the Montreal Protocol, enabling activities, and in particular institutional strengthening and other capacity-building and awareness-raising activities, have indirectly assisted ratification efforts and thus enabled universal ratification.

66. Based on the 25 years of operation of the Multilateral Fund, implementation of sound enabling activities in Article 5 countries as early as feasible would allow for a sustainable, cost-effective and

²⁷ The Secretariat was requested to prepare a document on options for assessing and defining eligible incremental costs for HCFC consumption and production phase-out activities.

²⁸ UNEP/OzL.Pro/ExCom/53/60.

successful phase-down of HFC consumption and production in Article 5 countries, and potentially reduce demand for HFCs during the base year as agreed in the Kigali Amendment to the Montreal Protocol. Assistance from bilateral and implementing agencies has contributed extensively to the implementation of enabling activities in Article 5 countries, in particular the assistance provided through the UN Environment CAP.

Potential activities to facilitate HFC phase-down

67. In addition to the enabling activities described in earlier sections of this document, the following activities could be relevant to HFC phase-down:

- (a) An assessment of the current regulatory framework in Article 5 countries in the context of ratification of the Kigali Amendment, and obligations under the Montreal Protocol (e.g., Article 4B on licensing and Article 7 on reporting);
- (b) Consideration of national policies and regulations to facilitate the phase-down of HFCs and the introduction of low-GWP alternative technologies through, *inter alia*, potential bans on the import of HFC-based RAC equipment when low-GWP based equipment is commercially available; development and subsequent enforcement of safety standards for handling flammable and toxic refrigerants; and development of minimum standards for the energy efficiency of RAC equipment;
- (c) Institutional arrangements for the implementation of activities, such as consultations with government authorities responsible for climate change and energy efficiency, to ensure a streamlined approach to HFC phase-down;
- (d) Early introduction, adaption and/or optimization of low-GWP alternative technologies when available, to avoid the replacement of HCFC-based technologies with high-GWP technologies, thus reducing the future consumption and production of HFCs; and
- (e) With regard to the HFC production sector, development of policy and regulations to ban the venting of HFC-23 and mandatory reporting on HFC-23 emissions; technical assistance for process optimization and leakage control; and awareness-raising and information dissemination activities on HFC-23 emission control.

SECRETARIAT'S RECOMMENDATION

68. The Executive Committee may wish:

- (a) To take note of document UNEP/OzL.Pro/ExCom/78/6 on Information relevant to the development of the cost guidelines for the phase-down of HFCs in Article 5 countries: enabling activities;
- (b) To provide guidance to the Secretariat on how these activities will be considered as part of the cost guidelines for HFC phase-down;
- (c) To provide guidance on which enabling activities may be included for funding under the US \$27 million additional contribution from donor countries, as noted in the document on Procedures for Article 5 countries that have HFC consumption baseline years from 2020 to 2022 in accessing additional contributions for enabling activities (UNEP/OzL.Pro/ExCom/78/10).

Annex I

ENABLING ACTIVITIES: ARTICLE 4B OF THE MONTREAL PROTOCOL

1. Since the adoption of the Montreal Protocol, the Parties and the Executive Committee has adopted a series of decisions to fund activities to enable Article 5 countries' obligations related to Article 4B as summarized below.
2. At the Ninth Meeting (September 1997), the Parties adopted the Montreal Amendment to the Montreal Protocol. In doing so, all Parties were *inter alia* required to implement an import and export licensing system that *inter alia* assists collection of sufficient information to facilitate compliance with reporting requirements under Article 7 of the Protocol, and assists Parties in the prevention of illegal traffic of controlled substances. At that meeting, the Parties also noted that the Multilateral Fund should provide appropriate additional funding for this purpose (decision IX/8).
3. Subsequent to the requirement of the license system to control imports and exports of controlled substances, several decisions related to this matter were taken as summarized below:
 - (a) At the 27th meeting (March 1999), the Executive Committee decided that no funds should be expended on customs training projects until either the relevant legislation was already in place or substantial progress had been made towards promulgating such legislation. For countries that were in the process of preparing legislation the implementing agencies were requested to provide information on ODS issues of relevance to customs authorities so that they would be able to provide informed inputs into the legislation preparation process (decision 27/19(a) and (b));
 - (b) At the 33rd meeting (March 2001), while the Executive Committee decided to continue funding customs training for each country, it requested UNEP to seek opportunities to implement regional and sub-regional customs training (decision 33/51);
 - (c) At the 38th meeting (November 2002), the Executive Committee decided that requests for funding of TPMPs might be considered on a-case-by-case basis, provided that *inter alia* the country concerned has a licensing system in operation and has enacted or improved legislation to phase-out ODS consumption (decision 38/64(a)); and
 - (d) At the 47th meeting (November 2005), the Executive Committee requested bilateral and implementing agencies providing assistance in the preparation and implementation of new TPMPs to ensure that within the approved levels of funding, project activities included support for developing and implementing licensing systems or import controls for methyl bromide, CTC and/or TCA in cases where there were zero baselines for one or more of those substances but there was a risk of future consumption (decision 47/10).
4. At the 45th meeting (April 2005), the Executive Committee considered a report on the evaluation of customs officers training and licensing system projects¹ prepared by the Senior Monitoring and Evaluation Officer, which outlined the licensing systems in the countries visited, the customs procedures, the illegal imports detected, the training courses conducted in the countries visited, the refrigerant identifiers delivered, the experiences reported and the improvements suggested. Further to revising the report on the basis of the discussions held at the meeting, the Committee submitted the revised report to the Twenty-fifth Meeting of the OEWG (June 2005) (decision 45/10). The OEWG discussed the report

¹ UNEP/OzL.Pro/ExCom/45/11.

and suggested that it would be addressed as appropriate in future deliberations of the Executive Committee². Subsequently, the Seventeenth Meeting of the Parties (December 2005) took the matter up again in the context of discussions on preventing illegal trade in controlled ODS, and requested the Executive Committee to consider at its 48th meeting the recommendations contained in the above mentioned report on the evaluation of customs officers training and licensing system projects, in particular where they relate to customs training and other elements of capacity building that are needed in combating illegal trade in controlled ODS (decision XVII/16).

5. At the 48th meeting (April 2006), the Executive Committee decided (decision 48/11) *inter alia* to submit the following recommendations contained in the document on the evaluation of customs officers training and licensing system projects to the Twenty-fifth Meeting of the OEWG (follow up to decision XVII/16, paragraph 8)³ to the Ozone Secretariat in the context of the ongoing studies and discussions on how best to deal with illegal trade in ODS, and requested bilateral and implementing agencies to prepare and implement national phase-out plans and terminal phase-out management plans in a manner that would ensure, where feasible, implementation of these recommendations:

- (a) National Ozone Units (NOUs) should consider (in cooperation with relevant ministries/agencies) introducing regulations regarding the exports of ODS, licensing schemes for all ODS imports, a ban on ODS sales to non-licensed companies, and restrictions on the import of ODS-based refrigeration and air-conditioning equipment; appointing customs officers to participate in the Ozone Committees, signing memoranda of understanding between the Customs Department and the Ozone Unit, and creating focal points for environment in customs with access to the top level of customs hierarchy; involving certification and normalization institutes in the identification of ODS in case there is a lack of adequately equipped laboratory facilities in customs offices; making customs codes more detailed by adding digits to the HS codes to ensure differentiation of all ODS, in line with the recommendation of the World Customs Organization; adapting their customs registry systems so that the license number can be associated with the customs code of corresponding ODS; developing electronic licensing systems; when exporting ODS, informing importing countries about licensed shipments and checking that the clients are on the list of authorized importers, to be provided by the importing countries on a regular basis;
- (b) Bilateral and implementing agencies organizing training programmes for customs officers should, in cooperation with NOUs invite high level officials from customs and other government departments to seminars to ensure high level support for the correct application of the licensing system and identification of ODS imports; ensure that mainly customs officers who actually carry out the inspections participate; invite professional trade agents or brokers who are generally in charge of managing the clearance of shipments; bring in as a resource person a customs officer/enforcement official from another country that has established control systems for trade in ODS; ensure that phase I (train the trainer) and phase II (training of customs officers) takes place in rapid succession; ensure that a database of active trainers and trainees is maintained; expedite the dispatch of refrigerant identifiers supplied to customs services along with operating instructions and clarification of related legal aspects; and
- (c) UNEP should consider within its Compliance Assistance Programme to organize seminars on regional cooperation between customs officers, in particular for regional customs

² Paragraph 160 of UNEP/OzL.Pro.WG.1/25/9.

³ UNEP/OzL.Pro/ExCom/48/13.

unions, supporting the harmonization of legislation and customs procedures; promote the creation of informal regional networks of customs officials; amend its training manual for customs officers by adding information on customs controls and detection of illegal trade with methyl bromide, CTC and TCA; generalize the development of rapid screening tools (e.g., the Customs Quick Reference tool, posters, check lists and databases), ensuring wide distribution to Article 5 countries.

6. At the 49th meeting (July 2006), the Executive Committee *inter alia* recommended that NOUs in planning and implementing RMPs and NPPs or TPMPs consider, where feasible and in cooperation with other relevant government ministries/agencies, updating and complementing ODS-related legislation where additional legal measures were needed and further specification of enforcement mechanisms had been identified (e.g., improvement of the mechanisms for import and export quota allocations under the licensing system and the monitoring of their actual use; enhancement of cooperation between the NOU and the customs authorities) (decision 49/6(a)).

7. At the 54th meeting (April 2008) the Executive Committee adopted guidelines for the preparation of HPMPs which included *inter alia* giving consideration to providing funding to include HCFC control measures in legislation, regulations and licensing systems as part of the funding of HPMP preparation as necessary and confirmation of the implementation of the same as a prerequisite for funding implementation of the HPMP (decision 54/39(e)).

At 58th meeting (July 2009), the Executive Committee *inter alia* requested bilateral and implementing agencies, when implementing the last tranche(s) of the TPMPs, to advise and assist Article 5 countries in reviewing current ODS regulations, including licensing systems, and in incorporating import/export regulations on HCFCs (decision 58/6(b)(iii)).

Annex II

ENABLING ACTIVITIES: REPORTING

1. This annex lists relevant decisions by the Parties and the Executive Committee on data reporting by Article 5 countries under Article 7 of the Montreal Protocol and under the progress report on the implementation of the country programme.

Article 7 data

2. As required by the Protocol, at their First Meeting (May 1989), the Parties *inter alia* established an open-ended ad hoc Working Group of Legal Experts to develop and submit proposals for consideration and approval by the Parties at their Second Meeting on procedures and institutional mechanisms for determining non-compliance with the provisions of the Montreal Protocol and for the treatment of Parties that fail to comply with its terms (decision I/8). At the same meeting, the Parties also decided that each Party is required to report its annual production, imports and exports of each individual controlled substance under the Montreal Protocol. Data submitted to the Ozone Secretariat will be treated with professional secrecy and maintained confidential, and shall be reported as aggregated data from several Parties in such a way as to ensure that data from Parties deemed to be confidential is not disclosed, and shall also be published over all Parties for each individual controlled substance. The Parties also decided that data submitted under Article 7 shall when necessary be made available on a confidential basis to resolve disputes under Article 11 of the Convention¹ (decision I/11).

3. In response to decision I/8, at their Second Meeting (London 1990), the Parties adopted, on an interim basis, the procedures and institutional mechanisms for determining non-compliance with the provisions of the Protocol and for treatment of Parties found to be in non-compliance² (decision II/5). The procedures included *inter alia*, the establishment of an Implementation Committee to receive, consider and report on any information or observations forwarded by the Ozone Secretariat in connection with the preparation of the reports referred to in Article 12 (c) of the Protocol³ and on any other information received and forwarded by the Ozone Secretariat concerning compliance with the provisions of the Protocol; and to identify the facts and possible causes relating to individual cases of non-compliance referred to the Committee, as best it can, and make appropriate recommendations to the Meeting of the Parties.

4. At their Third Meeting (June 1991), the Parties adopt the revised formats for reporting data under the amended Montreal Protocol⁴ (decision III/9). The revised formats were subsequently revised at their Fifth Meeting⁵ (November 1993) (decision V/5), and at their Ninth Meeting⁶ (September 1997) where the Parties *inter alia* noted that the revised data forms when completed, largely fulfil the reporting requirements under the Montreal Protocol, excluding those for essential-use exemptions (decision IX/28).

5. At their Fourth Meeting (Copenhagen 1992), the Parties adopt the non-compliance procedure⁷, as well as the indicative list of measures that might be taken in respect of non-compliance⁸ (i.e., assistance

¹ Refers to settlement of disputes under the Vienna Convention for the Protection of the Ozone Layer.

² Annex III of the Report of the Second Meeting of the Parties (UNEP/OzL.Pro.2/3).

³ The Ozone Secretariat shall receive and make available, upon request by a Party, data provided pursuant to Article 7.

⁴ Annex XI of the report of the Third Meeting of the Parties (UNEP/OzL.Pro.3/11).

⁵ Annex I to the report of the Fifth Meeting of the Parties (UNEP/OzL.Pro.5/12).

⁶ Annex VII to the report of the Ninth Meeting of the Parties (UNEP/OzL.Pro.9/12).

⁷ Annex IV to the report of the Fourth Meeting of the Parties (UNEP/OzL.Pro.4/15).

⁸ Annex V to the report of the Fourth Meeting of the Parties (UNEP/OzL.Pro.4/15).

for the collection and reporting of data, technical assistance, technology transfer and financial assistance, information transfer and training; issuing cautions; and suspension, in accordance with the applicable rules of international law concerning the suspension of the operation of a treaty, of specific rights and privileges under the Protocol, whether or not subject to time limits, including those concerned with industrial rationalization, production, consumption, trade, transfer of technology, financial mechanism and institutional arrangements).

6. In adopting the revised forms at their Ninth Meeting, the Parties also noted that the issue of reporting data is an important one and that it is an area to which the Parties may consider giving greater consideration; recalled decision IV/10⁹ and paragraph 3(b) of decision IX/17 and request TEAP, in cooperation with the UNEP Industry and Environment Centre, to prepare a list of mixtures known to contain controlled substances and the percentage proportions of those substances (in particular, on refrigerant mixtures and solvents), and to report this information to the Parties at the seventeenth meeting of the Open-ended Working Group, and annually thereafter; and requested UNEP Industry and Environment Centre to draw on its existing reports and its OzonAction Information Clearinghouse diskette database, and, in collaboration with the other implementing agencies and the Fund Secretariat, prepare a handbook on data-reporting which will provide information to the Parties to assist all Parties with data-reporting. This information should include techniques for data collection, trade names, as identified by TEAP, customs codes (where these exist), and advice on what sectors of industry may be using these products.

7. At their Fifteenth Meeting (November 2013) the Parties noted that in order to review the compliance of a Party and to make useful and timely recommendations the Implementation Committee must have access to accurate and up-to-date information and, in that regard, the importance of timely data reporting pursuant to Article 7, encouraged the Parties to forward data on consumption and production to the Secretariat as soon as the figures are available, and preferably by 30 June each year, rather than 30 September as required by paragraph 3 of Article 7 of the Protocol (decision XV/15(a)).

8. Issues related to data reporting under Article 7 of the Montreal Protocol are considered at each meeting of the Parties (based on the reports from the Implementation Committee). Usually, there are few Parties which are in non-compliance with their obligations under Article 7. For example, at their Twenty-eighth Meeting (i.e., the last Meeting of the Parties), the Parties *inter alia* noted that 195 parties of the 197 that should have reported data for 2015 have done so and that 169 of those parties reported their data by 30 September 2016 (119 of those parties reported their data by 30 June 2016), and also noted with concern that two parties (one non-Article and one Article 5), have not reported their 2015 data and that this places them in non-compliance with their data reporting obligations (decision XXVIII/9).

Country programme data

9. At the 5th meeting (November 1991), the Executive Committee noted that Governments should monitor the progress being made in reducing ODS consumption in line with their plans set out in the country programme, and should periodically review the effectiveness of the measures being taken, and requested Article 5 Parties to present annually information on progress being made in the implementation of their country programmes. If it becomes necessary to change the action plan in order to maintain progress, an up-dated country programme should be submitted to the Secretariat for further consideration by the Committee (UNEP/OzL.Pro/ExCom/5/16, paragraphs 22 and 23).

⁹ The Parties noted the list of trade names of controlled substances compiled by the TEAP and distributed by the Secretariat to all Governments in March 1992.

10. At the 13th meeting (July 1994), the Executive Committee adopted the format for presentation of information on progress of implementation of country programmes¹⁰ and requested Article 5 parties to present the annual information on the progress of implementation of their country programmes in accordance with the decision taken at its 10th meeting; the information should cover the progress of implementation for the period 1 January to 31 December and should be forwarded to the Secretariat not later than three months after the end of the year to which the information relates; and starting from the 13th meeting, decisions on each approved country programme should include a requirement for presenting information annually on progress of implementation of the country programme according to the above decisions (UNEP/OzL.Pro/ExCom/13/47, paragraphs 192 and 193).

11. The Seventh Meeting of the Parties (December 1995) accepted that the Secretariat should be entitled to seek clarification on data reported under Article 7 if there is a discrepancy with the data in the country programme of the country concerned; and through these clarifications it should be established which are the best available and most accurate data. Should the clarification not result in an agreement, the data provided by the Party to the Secretariat should be used (decision VII/20).

12. In response to decision VII/20, at the 19th meeting (May 1996) the Executive Committee decided that the data submitted to the Ozone Secretariat and those submitted to the Fund Secretariat should be reconciled; and that discrepancies in data provided by Parties to the Ozone Secretariat and to the Secretariat of the Multilateral Fund should be submitted to the Executive Committee (decision 19/28).

13. At the 20th meeting (October 1996), after considering the updated report on the progress of implementation of country programmes approved between February 1992 and December 1995, the Executive Committee *inter alia* invited members of the Executive Committee to submit to the Secretariat in writing proposals on improving the presentation of the implementation data so that the Secretariat could propose a new format to the Committee (decision 20/36(e)).

14. At the 46th meeting (July 2005), the Executive Committee *inter alia* approved revised formats for reporting country programmes¹¹; requested NOUs, starting in 2006, to report on the implementation of country programmes using the revised format; and requested the Secretariat to incorporate the data collected into the annual analysis forecasting the compliance potential of Article 5 countries. The Committee also decided to review the implementation of the revised format at its last meeting in 2007 (decision 46/39).

15. At the 52nd meeting (July 2007), the Executive Committee *inter alia* requested UNEP's Compliance Assistance Programme to allocate time during its regional network meetings for additional training on the system for reporting progress on country programme implementation and to provide feedback on the experience gained by the initial users of the web-based system; reconfirmed existing guidelines regarding submission of country programme implementation data by 1 May each year; and noted that country programme implementation data had to be submitted in advance of the last meeting of the year and subsequent meetings as a precondition for the approval and release of funding for projects (decision 52/5(d), (e) and (f)).

16. Subsequent to the agreement by the Parties at their Nineteenth Meeting (September 2007) to accelerate the phase-out of production and consumption of HCFCs, by way of an adjustment in accordance with paragraph 9 of Article 2 of the Montreal Protocol (decision XIX/6), the Executive Committee at its 54th meeting (April 2008) *inter alia* requested that information on all ODS, including HCFCs and their alternatives, be included in country programme data reports (decision 54/4(f)).

¹⁰ Annex II of document UNEP/OzL.Pro/ExCom/13/47.

¹¹ Annex XIV of document UNEP/OzL.Pro/ExCom/46/47.

17. Subsequently, at its 60th meeting (April 2010), the Executive Committee *inter alia* requested the Secretariat to modify the country programme data reporting format to include information relevant to the HCFC phase-out, including whether HCFC control measures were included in licensing systems (decision 60/4(b)(iv)).

18. At its 74th meeting (May 2015), the Executive Committee considered the document on Country programme data and prospects for compliance¹². Subsequent to the discussion, the Executive Committee *inter alia* requested Article 5 countries to submit country programme data reports eight weeks prior to the first meeting of year, if possible, and no later than 1 May, on the understanding that the deadlines for country programme data submission would need to be revisited in the event that the Committee were to decide to revert to holding three meetings a year. The Executive Committee also requested the Secretariat to present to the 75th meeting a proposal for an updated country programme report format, taking into account discussions held on the format at its 74th meeting (decision 74/9(b)).

19. At its 76th meeting (May 2016), in discussing the document on Country programme data and prospects for compliance¹³, the Executive Committee considered revision of the format and noted that there might be a need to change it in response to some future change of circumstances, such as the outcome of the survey on ODS alternatives, or the outcome of the discussions on the Dubai Pathway on HFCs. On this basis, the Committee decided *inter alia* to continue using the existing country programme data report format for the time being, with some adjustments¹⁴.

¹² UNEP/OzL.Pro/ExCom/74/11.

¹³ UNEP/OzL.Pro/ExCom/76/9.

¹⁴ The following adjustments were made: Section B (regulatory, administrative and supportive actions) was no longer needed, although such data might be needed if there were further adjustments or chemicals added; Section C (HCFC quotas issued and prices of ODS and alternatives (where available)) was still relevant, although information on training and recovery, recycling and reuse was no longer needed; and Section D (status of implementation of the licence and quota system (qualitative assessment of operation of the HPMP)) should continue to be provided, but other qualitative information in that section was no longer necessary.

Annex III

ENABLING ACTIVITIES: DEMONSTRATION PROJECTS

1. Since the inception of the Multilateral Fund, the Executive Committee has approved 136 demonstration projects at a total value of US \$70,944,276 (including agency support costs). While demonstration projects have been approved in the majority of the manufacturing sectors where controlled substances are being used, the Executive Committee has approved the following specific funding windows for demonstration projects.

Funding window for methyl bromide demonstration projects

2. At their Ninth Meeting (September 1997), the Parties decided that the Multilateral Fund shall meet all agreed incremental costs of Article 5 Parties to enable their compliance with the control measures on methyl bromide; all methyl bromide projects will be eligible for funding irrespective of their relative cost-effectiveness. The Executive Committee should develop and apply specific criteria for methyl bromide projects in order to decide which projects to fund first and to ensure that all Article 5 Parties are able to meet their obligations regarding methyl bromide. The Parties while noting that the overall level of resources available to the Multilateral Fund during the 1997-1999 triennium was limited to the amounts agreed at the Eighth Meeting, gave immediate priority to the use of resources of the Multilateral Fund for the purpose of identifying, evaluating, adapting and demonstrating methyl bromide alternatives and substitutes. In addition to the US \$10 million agreed upon at the Eighth Meeting of the Parties, a sum of US \$25 million per year should be made available for these activities in both 1998 and 1999 to facilitate the earliest possible action towards enabling compliance with the agreed control measures on methyl bromide (decision IX/5).

3. In response to decision IX/5, the Executive Committee approved 44 demonstration projects in 32 countries at a total value of US \$14,119,342 (including agency support costs). Based on the results of the demonstration projects, the Executive Committee approved 198 investment or technical assistance projects in 67 countries and three regional projects at a total value of US \$118,327,957 (including agency support costs) resulting in the complete phase-out of methyl bromide in Article 5 countries, in many cases well in advanced of the 2015 control target. The list of methyl bromide demonstration projects is presented in Table 1.

Table 1. Methyl bromide demonstration projects

Country	Project	Sector	Approved	Meeting	US \$
Guatemala	Four alternatives to the use of methyl bromide: steam pasteurization, non-soil cultivation, solarization, and low-dose chemicals, in combination with an Integrated Pest Management	FUM	May-97	22	431,833
Egypt	Four alternatives to the use of methyl bromide in horticulture (strawberries, tomatoes, cucurbits)	FUM	Nov-98	26	227,000
Region: AFR	Regional demonstration project on alternatives to the use of methyl bromide for treatment of high moisture dates (Algeria and Tunisia)	FUM	Apr-08	54	329,823
Uruguay	Alternatives to the use of methyl bromide as a soil fumigant in protected horticultural crops (cucumbers and peppers), seedbeds, and nurseries (vegetables, tobacco and forestry)	FUM	Jul-98	25	336,474
Brazil	Three alternatives to the use of methyl bromide: non-soil cultivation, solarization, and low-dose chemicals	FUM	May-97	22	413,153
Zimbabwe	Alternatives to the use of methyl bromide on stacked bags of maize under gas proof PVC sheets and plastic cocoons (storage)	FUM	Mar-99	27	229,060

Country	Project	Sector	Approved	Meeting	US \$
Botswana	Three alternatives to the use of methyl bromide: non-soil cultivation techniques, bio-fumigation with solarization, and application of various mixtures of other chemicals in low dose	FUM	Jul-98	25	165,319
Chile	Demonstration project for testing methyl bromide alternatives in soil treatment applications for tomatoes and peppers	FUM	Jul-98	25	393,304
Egypt	Application of methyl bromide alternatives in grain storage	FUM	Nov-98	26	297,000
Dominican Republic	Alternatives to the use of methyl bromide: soil pasteurization (steam), non-soil cultivation, solarization with biofumigation and low dose chemicals all in combination with IPM	FUM	Nov-98	26	365,828
Chile	Bromosorb technology in commodity fumigation	FUM	Dec-94	15	317,000
Indonesia	Alternatives to the use of methyl bromide in stored products (rice, coffee and corn)	FUM	Nov-98	26	368,556
Croatia	Three alternatives to the use of methyl bromide in tobacco production; namely, solarization plus bio-fumigation, the use of low-dose chemicals, and non-soil cultivation, in combination with an IPM	FUM	Jul-98	25	293,786
Cameroon	Two alternatives to the use of methyl bromide: non-soil cultivation techniques and application of various mixtures of other chemicals in low doses in tobacco	FUM	Jul-98	25	180,278
Colombia	Alternatives to the use of methyl bromide in banana growing at Cenibanano	FUM	Nov-98	26	138,765
Costa Rica	Alternatives to methyl bromide for soil fumigation on Costa Rican melons	FUM	Mar-99	27	203,965
China	Demonstration project on alternatives to the use of methyl bromide in soil fumigation	FUM	May-97	22	485,086
China	Methyl bromide replacement demonstration programme	FUM	May-97	22	145,000
Costa Rica	Alternatives to methyl bromide for soil fumigation on Costa Rican cut flowers	FUM	Mar-99	27	218,523
Viet Nam	Alternatives to the use of methyl bromide on stacked bags of rice, grain in silos, and timber on a warehouse under tarps at Viet Nam Fumigation Company	FUM	Mar-98	24	453,540
Lebanon	Demonstration project of alternative to methyl bromide for soil fumigation (greenhouse)	FUM	Nov-98	26	367,523
Tunisia	Alternatives to the use of methyl bromide in horticulture at Société Méditerranéenne Fruitière	FUM	Mar-98	24	327,954
Zimbabwe	Two alternatives to the use of methyl bromide in the production of tobacco drought-resistant seedlings: non-soil cultivation and low-dose chemicals	FUM	Nov-97	23	399,154
Morocco	Three alternatives to the use of methyl bromide: enemy plants, organic amendments and grafting on resistant rootstocks in combination with an integrated pest management system in tomatoes and cucurbits	FUM	Nov-98	26	229,523
Morocco	Four alternatives to the use of methyl bromide in horticulture: steam pasteurization, non-soil cultivation, solarization, and low-dose chemicals, in combination with an Integrated Pest Management	FUM	May-97	22	542,371
Malawi	Phase out of all non-essential and non-QPS methyl bromide (first tranche)	FUM	Dec-00	32	452,000
Jordan	Three alternatives to the use of methyl bromide: steam pasteurization, non-soil cultivation and optimal use of soil fumigants in combination with an integrated pest management	FUM	Jul-98	25	362,419
Mexico	Alternatives to methyl bromide for structural fumigation in Mexico	FUM	Nov-98	26	463,657

Country	Project	Sector	Approved	Meeting	US \$
Mexico	Alternatives to the use of methyl bromide in the cultivation of tomatoes, strawberries, tobacco, melons, and cut flowers	FUM	Jul-98	25	877,144
Argentina	Demonstration and training in viable alternatives, information dissemination and development of a national plan for phasing out methyl bromide in the tobacco sector	FUM	Nov-98	26	307,198
Philippines	Demonstration, training and policy development on alternatives to methyl bromide for banana soil fumigation	FUM	Nov-98	26	18,607
Malaysia	Alternatives to the use of methyl bromide on Malaysian timbers	FUM	Nov-99	29	250,772
Argentina	Open and closed circuit non-soil cultivation as main alternatives to the use of methyl bromide in tomato, cut flowers and strawberry production	FUM	Nov-97	23	522,742
Turkey	Alternatives to the use of methyl bromide as soil fumigant in protected horticulture (tomatoes and cucumbers) and ornamental (carnations) crops	FUM	Jul-98	25	344,899
Kenya	Methyl bromide replacement demonstration programme	FUM	Nov-98	26	100,000
Sri Lanka	Alternatives to methyl bromide for eradication of tea nematodes in Sri Lanka	FUM	Mar-99	27	341,662
Kenya	Alternatives to the use of methyl bromide for soil fumigation in cut-flowers at Kenya Agricultural Research Institute – KARI	FUM	Mar-98	24	368,247
Syria	Alternatives to the use of methyl bromide in horticulture and commodities fumigation	FUM	Mar-98	24	538,423
Argentina	Demonstration project for testing methyl bromide alternatives in post-harvest disinfestation for cotton and citrus (phase I)	FUM	Nov-99	29	352,931
Thailand	Alternatives to the use of methyl bromide in grain storage (rice, maize, tapioca, feed grains and pulses)	FUM	Jul-98	25	292,405
Macedonia, FYR	Three alternatives to the use of methyl bromide: non-soil cultivation, biofumigation and low dose chemicals in tobacco and horticultural production	FUM	Nov-98	26	292,664
Kenya	Replacement of methyl bromide with non-ozone depleting substances in grain storage	FUM	Feb-97	21	140,965
Jordan	Comprehensive approach to disseminate soil solarization technology for methyl bromide substitution	FUM	Nov-98	26	232,789

Funding window for chiller projects

4. At their Sixteenth Meeting (November 2004), the Parties recognizing *inter alia* the need to develop a management plan for CFC-based chillers in Article 5 Parties, to facilitate CFC phase-out in chillers, requested the Executive Committee to consider: funding of additional demonstration projects to help demonstrate the value of replacement of CFC-based chillers, pursuant to relevant decisions of the Executive Committee; and funding actions to increase awareness of users in Article 5 countries of the impending phase-out and options that may be available for dealing with their chillers and to assist Governments and decision makers (decision XVI/13(a) and (b)).

5. In response to decision XVI/13, at its 45th meeting (April 2005) the Executive Committee decided to establish a funding window amounting to US \$15.2 million for the chiller sector in 2005, and requested the Secretariat to prepare a study, with input from the implementing agencies, on criteria and modalities for chiller demonstration projects, including how different regional funds for the chiller sector might

come into operation, taking into account proposals submitted and comments made during the current meeting, for consideration at the 46th meeting (decision 45/4(c) and (d)).

6. At its 47th meeting (November 2005), on the basis of a study on criteria and modalities for chiller demonstration projects¹ prepared by the Secretariat, the Executive Committee decided *inter alia* to utilize the funding window of US \$15.2 million for additional demonstration projects in the chiller sub-sector, with an understanding that no further funding for chiller replacement would be approved by the Executive Committee (UNDP, UNIDO and the World Bank, as well as interested bilateral agencies, were invited to submit to the 47th meeting project proposals that could be replicated in other countries to demonstrate the feasibility of and modalities for replacing centrifugal chillers in the future through use of resources external to the Multilateral Fund). The Secretariat was requested to hold meetings with all agencies to evaluate and, if necessary, prioritize demonstration project proposals using the following criteria: cost justification; interlinkage with the existing phase-out plan; regional balance of projects; the total funding per chiller, taking into account national and local conditions, could be determined by a mathematical and business model and the annual return on investment; CFC consumption for the servicing of chillers as a share of total 2004 CFC consumption in the country; and the level and source of probable financial resources outside the Fund to be utilized for the project. The Executive Committee also requested UNEP to submit a proposal regarding implementation of information, dissemination and awareness activities at a global level with the objective of disseminating the experience gained in the demonstration projects globally (decision 46/33).

7. In response to the above mentioned decisions, at the 47th and 48th meetings, the Executive Committee approved US \$15,693,016 (including support costs) for the implementation of nine chillers demonstration projects (one each for Brazil, Colombia, Cuba and the Syrian Arab Republic; one regional project for Africa (Cameroon, Egypt, Namibia, Nigeria and Sudan); one regional project for Europe (Croatia, Former Yugoslav Republic of Macedonia, Romania, and Serbia and Montenegro); one for the Caribbean region (application of energy-efficient CFC-free technologies for replacement of CFC-based chillers); and one global project (China, India, Indonesia, Malaysia and Philippines)). Since the implementation of the projects, US \$5,212,480 (including agency support costs has been returned to the Multilateral Fund. Table 2 lists all the chillers demonstration projects.

Table 2. Chillers demonstration projects

Country	Project	Sector	Approved	Meeting	US \$
Brazil	Demonstration project for integrated management of the centrifugal chiller sub-sector, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	REF	Nov-05	47	1,075,000
Cuba	Demonstration project for integrated management of the centrifugal chiller sub-sector, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	REF	Nov-05	47	1,060,915
Colombia	Demonstration project for integrated management of the centrifugal chiller sub-sector, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	REF	Nov-05	47	1,075,000
Syria Arab Republic	Demonstration project on the replacement of CFC centrifugal chillers	REF	Nov-05	47	403,586
Region: AFR	Strategic demonstration project for accelerated conversion of CFC chillers in 5 African Countries (Cameroon, Egypt, Namibia, Nigeria and Sudan)	REF	Apr-06	48	217,525

¹ UNEP/OzL.Pro/ExCom/46/37.

Country	Project	Sector	Approved	Meeting	US \$
Region: AFR	Strategic demonstration project for accelerated conversion of CFC chillers in 5 African Countries (Cameroon, Egypt, Namibia, Nigeria and Sudan)	REF	Apr-06	48	803,563
Region: AFR	Strategic demonstration project for accelerated conversion of CFC chillers in 5 African Countries (Cameroon, Egypt, Namibia, Nigeria and Sudan)	REF	Apr-06	48	791,000
Region: AFR	Strategic demonstration project for accelerated conversion of CFC chillers in 5 African Countries (Cameroon, Egypt, Namibia, Nigeria and Sudan)	REF	Apr-06	48	406,800
Global	Global chiller replacement project (China, India, Indonesia, Malaysia and Philippines)	REF	Nov-05	47	4,533,473

Funding window for ODS waste management

8. At their Twentieth Meeting (November 2008), the Parties *inter alia* invited Parties, international funding agencies, including the Multilateral Fund and the Global Environment Facility (GEF), and other interested agents to enable practical solutions for the purpose of gaining better knowledge on mitigating ODS emissions and destroying ODS banks, and on costs related to the collection, transportation, storage and destruction of ozone depleting substances, notably in Article 5 Parties; requested the Executive Committee to consider as a matter of urgency commencing pilot projects that may cover the collection, transport, storage and destruction of ODS. As an initial priority, the Executive Committee might consider projects with a focus on assembled stocks of ODS with high net GWP, in a representative regional sample. It is understood that this initial priority would not preclude the initiation of other types of pilot projects, including on halons and carbon tetrachloride, should these have an important demonstration value. In addition to protecting the ozone layer, these projects will seek to generate practical data and experience on management and financing modalities, achieve climate benefits, and would explore opportunities to leverage co-financing. The Parties also requested the Ozone Secretariat, with the assistance of the Fund Secretariat, to consult with experts from the United Nations Framework Convention on Climate Change (UNFCCC), the GEF, the Executive Board of the Clean Development Mechanism (CDM), the World Bank and other relevant funding experts to develop a report on possible funding opportunities for the management and destruction of ODS banks, to present the report to the Parties for review and comments one month prior to the 29th meeting of the Open-Ended Working Group and, if possible, to convene a single meeting among experts from the funding institutions (decision XX/7, paragraphs 1, 2 and 9).

9. In response to decision XX/7, at the 57th meeting (March-April 2009), the Executive Committee discussed ODS disposal demonstration projects in the context of the Consolidated business plan of the Multilateral Fund and consideration of the updated model rolling three-year phase-out plan for 2009-2011². Members stressed the importance of establishing criteria for including such projects in the business plans, and that ODS disposal demonstration projects should be feasible, and should include methods of leveraging co funding. ODS disposal was recognized as being an important issue for Article 5 countries without the necessary facilities to destroy CFC stocks. Despite the need to move ahead, it was pointed out that a number of studies linked to ODS disposal were in progress, one by the Ozone Secretariat with a compilation of funding options for ODS destruction, and an upcoming study by the World Bank. Awaiting the results of those studies would lead to more enlightened decisions regarding which demonstration projects to include in business plans. Following the discussion (where a contact group was established to consider the issue further), the Executive Committee decided, with regard to the ODS disposal projects, to remove from the implementing agencies' business plans all those projects except for proposals from Brazil (UNDP), Ghana (UNDP), Indonesia (World Bank), Mexico (UNIDO), Philippines (World Bank), Turkey (UNIDO), Asia and the Pacific region (Japan); and requested the

² UNEP/OzL.Pro/ExCom/57/7.

Secretariat to prepare a document containing criteria and guidelines for the selection of ODS disposal projects for consideration at the 58th meeting, taking into account decision XX/7, and the contact group discussions held at the 57th meeting (decision 57/6(f)(i) and (h)).

10. At the 58th meeting (July 2009), the Executive Committee discussed the document on Criteria and guidelines for the selection of ODS disposal projects³, prepared pursuant to decision 57/6 and taking into account decision XX/7. Subsequent to discussions (both in plenary and in a contact group established by the Chair), the Executive Committee approved interim guidelines for the funding of demonstration projects for the disposal of ODS in accordance with paragraph 2 of decision XX/7; requested the Secretariat to provide, to the second meeting of the Executive Committee in 2011, a report on the experience gained in the implementation of the disposal projects; and to consider whether to review the interim guidelines and related definitions at the 64th meeting in light of the experience gained and any additional information and guidance available at that time (decision 58/19).

11. In response to the above mentioned decisions, the Executive Committee approved US \$12,484,156 (including project preparation and support costs) for the implementation of demonstration project on ODS waste management and disposal in 12 countries (Algeria, Brazil, China, Colombia, Cuba, Georgia, Ghana, Lebanon, Mexico, Nepal, Nigeria and Turkey); one in Central African region (Burundi, Cameroon, Central African Republic, Congo and Guinea); one in the Europe and Central Asia region; and one global on development of strategy/methodology for ODS disposal. Table 3 lists all the ODS waste management demonstration projects.

Table 3. ODS waste management demonstration projects

Country	Project	Sector	Approved	Meeting	US \$
Cuba	Pilot demonstration project on ODS waste management and disposal	DES	Dec-10	62	564,590
Mexico	Demonstration project for disposal of unwanted ODS	DES	Apr-11	63	565,000
Mexico	Demonstration project for disposal of unwanted ODS	DES	Apr-11	63	997,509
Lebanon	Pilot demonstration project on ODS waste management and disposal	DES	Nov-14	73	134,588
Ghana	Pilot demonstration project on ODS waste management and disposal	DES	Apr-11	63	215,820
Nigeria	Demonstration project for disposal of unwanted ODS	DES	Jul-12	67	975,545
Region: EUR	Demonstration of a regional strategy for ODS waste management and disposal in the Europe and Central Asia region	DES	Apr-13	69	84,750
Region: EUR	Demonstration of a regional strategy for ODS waste management and disposal in the Europe and Central Asia region	DES	Apr-13	69	293,694
China	Pilot demonstration project on ODS waste management and disposal	DES	Jul-12	67	1,009,000
China	Pilot demonstration project on ODS waste management and disposal	DES	Jul-12	67	1,313,837
Colombia	Demonstration project on end of life ODS management and destruction	DES	Apr-12	66	1,284,625
Brazil	Pilot demonstration project on ODS waste management and disposal	DES	May-14	72	1,594,942
Algeria	Pilot demonstration project on ODS waste management and disposal	DES	May-14	72	401,313
Algeria	Pilot demonstration project on ODS waste management and disposal	DES	May-14	72	282,500
Georgia	Pilot demonstration project on ODS waste management and disposal	DES	Apr-13	69	60,238
Turkey	Demonstration project for disposal of unwanted ODS	DES	Apr-12	66	1,156,969

³ UNEP/OzL.Pro/ExCom/58/19.

Projects to demonstrate low-GWP alternative technologies

12. In line with decision decision 55/43, the Executive Committee approved 14 demonstration at a total value of US \$17,864,172 as shown in Table 4.

Table 4. HCFC demonstration projects approved pursuant to decision 55/43

Sectors/projects	Country	Agency	ODS	Alternative technology	Final report
PU foam manufacturing*					
Validation of methyl formate as a blowing agent in the manufacture of PU foam (BRA/FOA/56/DEM/285)	Brazil	UNDP	HCFC-141b	Methyl formate	Dec-2010
Validation of methyl formate in microcellular PU foam applications (MEX/FOA/56/DEM/141)	Mexico	UNDP	HCFC-141b	Methyl formate	Dec-2010
Validation of methylal as blowing agent in the manufacture of PU foams (BRA/FOA/58/DEM/292)	Brazil	UNDP	HCFC-141b	Methylal	Apr-2012
Conversion demonstration from HCFC-141b-based to cyclopentane-based pre-blended polyol in the manufacture of rigid PU foam at Guangdong Wanhua Rongwei Polyurethane Co. Ltd (CPR/FOA/59/DEM/491)	China	World Bank	HCFC-141b	Pre-blended cyclopentane	Nov-2014
Conversion of the foam part of Jiangsu Huaiyin Huihuang Solar Co. Ltd. from HCFC-141b to cyclopentane (CPR/FOA/59/DEM/492)	China	World Bank	HCFC-141b	Cyclopentane	Dec-2012
Validation of the use of supercritical CO ₂ in the manufacture of sprayed PU rigid foam (COL/FOA/60/DEM/75)	Colombia	Japan/UNDP	HCFC-141b	Supercritical CO ₂	Dec-2013
Validation/demonstration of low cost options for the use of HCs** as foaming agent in the manufacture of PU foams (EGY/FOA/58/DEM/100)	Egypt	UNDP	HCFC-141b	HC**	Partially completed Apr-2012
XPS foam manufacturing***					
Validation of the use of HFO-1234ze as blowing agent in the manufacture of XPS foam boardstock (TUR/FOA/60/DEM/96)	Turkey	UNDP	HCFC-22 /HCFC-142b	HFO-1234ze	Jun-2012
Conversion from HCFC-22/HCFC-142b technology to CO ₂ with methyl formate co-blowing technology in the manufacture of XPS foam at Feininger (Nanjing) Energy Saving Technology Co. Ltd. (CPR/FOA/64/DEM/507)	China	UNDP	HCFC-22 /HCFC-142b	CO ₂ /methyl formate	Nov-2014
Industrial/food processing and storage refrigeration manufacturing					
Conversion from HCFC-22 technology to ammonia/CO ₂ technology in the manufacture of two-stage refrigeration systems for cold storage and freezing applications at Yantai Moon Group Co. Ltd. (CPR/REF/60/DEM/499)	China	UNDP	HCFC-22	Ammonia/CO ₂	May-2014
Air-conditioning component development					
Conversion of room air-conditioning compressor manufacturing from HCFC-22 to propane at Guangdong Meizhi Co. (CPR/REF/61/DEM/502)	China	UNIDO	HCFC-22	HC-290	Dec-2013

Sectors/projects	Country	Agency	ODS	Alternative technology	Final report
Air-conditioning manufacturing					
Conversion from HCFC-22 technology to HFC-32 technology in the manufacture of commercial air-source chillers/heat pumps at Tsinghua Tong Fang Artificial Environment Co. Ltd. (CPR/REF/60/DEM/498)	China	UNDP	HCFC-22	HFC-32	May-2014
Conversion from HCFC-22 to propane at Midea Room Air-conditioning Manufacturing Company (CPR/REF/61/DEM/503)	China	UNIDO	HCFC-22	HC-290	May-2014
Solvents applications					
Conversion from HCFC-141b based technology to iso-paraffin and siloxane (KC-6) technology for cleaning in the manufacture of medical devices at Zhejiang Kindly Medical Devices Co. Ltd. (CPR/SOL/64/DEM/506, CPR/SOL/64/DEM/511)	China	Japan/UNDP	HCFC-141b	Iso-paraffin/siloxane (KC-6)	Nov-2014

*PU: Polyurethane.

**HC: Hydrocarbons.

***XPS: Extruded polystyrene.

13. Subsequently, at the 75th and 76th meetings, the Executive Committee approved an additional 18 project proposals to demonstrate low-GWP technologies, at a total funding of US \$18,028,551 (including agency support costs) pursuant to decision 72/40, as shown in Table 5.

Table 5. HCFC demonstration projects approved pursuant to decision 72/40

Subsector / application	Country	Agency	ODS	Alternative	Expected date of completion
Refrigeration and air-conditioning					
Demonstration project for the use of HC-290 (propane) as an alternative refrigerant in commercial air conditioning manufacturing at Industrias Thermotar Ltda	Colombia	UNDP	HCFC-22	R-290	Jun-17
Demonstration project for ammonia semi-hermetic frequency convertible screw refrigeration compression unit in the industrial and commercial refrigeration industry at Fujian Snowman Co., Ltd.	China	UNDP	HCFC-22	NH ₃ , CO ₂	Nov-17
Demonstration of the application of an ammonia/carbon dioxide refrigeration system in replacement of HCFC 22 for the medium-sized producer and retail store at Premezclas Industriales S.A	Costa Rica	UNDP	HCFC-22	R-717, R-744	Jul-17
Demonstration project for the introduction of trans-critical CO ₂ refrigeration technology for supermarkets (Argentina and Tunisia)	Global	UNIDO	HCFC-22	CO ₂	Nov-18
Demonstration project for HCFC free low GWP technology performance in air-conditioning applications	Kuwait	UNDP	HCFC-22	HC-290, HFC-32	May-19
Promoting refrigerant alternatives for high-ambient temperature countries (PRAHA-II)	Regional (West Asia),	UNEP/UNIDO	HCFC-22	HFC-32, HC-290 and HFO blends	Nov-17
Demonstration project on promoting HFO-based low-GWP refrigerants for the air conditioning sector in high-ambient temperatures	Saudi Arabia	UNIDO	HCFC-22	HFO/HFC blends, HC-290	May-18

Subsector / application	Country	Agency	ODS	Alternative	Expected date of completion
Demonstration project at air-conditioning manufacturers to develop windows and packaged air-conditioners using lower global warming potential refrigerants	Saudi Arabia	World Bank	HCFC-22	HFC-32, HC-290	May-17
PU foam manufacturing					
Demonstration project to validate the use of hydrofluoro olefins for discontinuous panels in Article 5 Parties through the development of cost effective formulations	Colombia	UNDP	HCFC-141b	Reduced HFOs	May-17
Demonstration of low cost options for the conversion to non ODS technologies in polyurethane foams at very small users	Egypt	UNDP	HCFC-141b	Methyl formate, methylal	May-17
Demonstration of the use of low cost pentane foaming technology for the conversion to non-ODS technologies in polyurethane foams at small and medium enterprises	Morocco	UNIDO	HCFC-22	Pentane	Dec-17
Demonstration project for the phase-out of HCFCs by using HFO as foam blowing agent in the spray foam applications in high-ambient temperatures	Saudi Arabia	UNIDO	HCFC-141b	HFOs	Oct-17
Demonstration project on the technical and economic advantages of the vacuum assisted injection (VAI) in discontinuous panel's plant retrofitted from HCFC 141b to pentane	South Africa	UNIDO	HCFC-141b	Cyclopentane	Sep-17
Demonstration project at foam system houses in Thailand to formulate pre blended polyol for spray polyurethane foam applications using low GWP blowing agent	Thailand	World Bank	HCFC-141b	HFO co-blown with CO ₂	May-17
Refrigeration servicing sector					
Demonstration project for HCFC-free low-GWP alternatives in refrigeration in the fisheries sector	Maldives	UNDP	HCFC-22	HFOs or HFO blends	May-18
Demonstration project on refrigerant quality, containment and introduction of low-global-warming potential (GWP) refrigerants	Global	UNIDO/ UNEP	HCFC-22	n/a	May-18
Development of international regional centre of excellence for training and certification and demonstration of low-global warming potential alternative refrigerants	Regional (Europe and Central Asia)	Russian Federation	HCFC-22	n/a	May-19
Feasibility studies on district cooling					
Feasibility study for district cooling in Punta Cana. Absorption chiller (waste heat) and deep sea water cooling	Dominican Republic	UNDP		n/a	May-16
Feasibility study addressing district cooling. Hybrid solar and gas thermal driven absorption chiller	Egypt	UNIDO/ UNEP		n/a	Nov-16
Feasibility study addressing district cooling. Deep sea water cooling, absorption chiller (waste heat and solar energy)	Kuwait	UNIDO/ UNEP		n/a	Nov-16

Other demonstration projects

14. Other demonstration projects that have been approved by the Executive Committee outside the above-mentioned funding windows are listed in Table 6.

Table 6. Other demonstration projects approved by the Executive Committee

Country	Project	Sector	Approved	Meeting	US \$
China	Halon leak reduction demonstration	HAL	Mar-95	16	90,437
Bolivarian Republic of Venezuela	Technical assistance in halon-1211 management	HAL	Jul-94	13	34,000
Global	Procurement of 40 halon recycling machines for demonstration	HAL	Jun-92	7	282,500
India	Demonstration and evaluation of alternative technology for halon fire protection system and technical assistance for sectoral strategy for ODS phase out	HAL	Jul-94	13	299,325
Colombia	MAC emissions reduction demonstration programme	REF	Dec-94	15	120,000
Viet Nam	Demonstration project in CFC recycling and emissions reduction in the commercial refrigeration sector	REF	Oct-96	20	178,515
Chile	Demonstration mobile air conditioning (MAC) and refrigerated transport (RT)	REF	May-96	19	140,000
Chile	Demonstration programme for service centre technicians on CFC-11 venting and leakage from refrigerators during operation and servicing	REF	Feb-92	6	28,250
Viet Nam	MAC servicing demonstration project	REF	Oct-96	20	140,909
Brazil	Demonstration programme to improve domestic refrigerator servicing and CFC recycling in service shops	REF	Feb-92	6	28,250
Argentina	MAC servicing demonstration	REF	Mar-95	16	170,000
Viet Nam	Demonstration project CFC recycling and emissions reduction in the commercial refrigeration sector	REF	Oct-96	20	240,525
Costa Rica	Mobile air conditioning (MAC) and refrigerated transport (RT)	REF	May-96	19	130,000
Region: ASP	Promoting low-global warming potential refrigerants for air-conditioning sectors in high-ambient temperature countries in West Asia	REF	Apr-13	69	390,550
Region: ASP	Promoting low-global warming potential refrigerants for air-conditioning sectors in high-ambient temperature countries in West Asia	REF	Apr-13	69	175,150
Guatemala	Refrigeration: mobile air conditioning (MAC) and refrigerated transport (RT)	REF	May-96	19	120,000
Turkey	MACs servicing demonstration project	REF	Nov-97	23	205,000
Jamaica	MAC demonstration project	REF	Nov-97	23	130,000
Region: LAC	Mobile air conditioning (MAC) and refrigerated transport (RT) in Central America: El Salvador, Honduras, Nicaragua and Panama	REF	Mar-98	24	569,000
Bolivarian Republic of Venezuela	Technical assistance and demonstration project in CFC recycling in MAC	REF	Oct-92	8	115,000
Mexico	Demonstration programme in CFC recovery and recycling of the Instituto Mexicano del Seguro Social (IMSS) refrigeration equipment	REF	Nov-91	5	499,918
Mexico	Demonstration project in MAC	REF	Jul-94	13	120,000
Philippines	MACs servicing demonstration project	REF	Nov-95	18	285,500
Trinidad and Tobago	MAC demonstration project	REF	Nov-97	23	117,000
Bolivarian Republic of Venezuela	Demonstration project in the refrigeration sector	REF	Dec-94	15	67,000
Bolivarian Republic of Venezuela	Demonstration project in MAC	REF	Jul-94	13	53,000
China	MAC servicing demonstration	REF	Mar-95	16	165,833

Country	Project	Sector	Approved	Meeting	US \$
China	Demonstration project (refrigeration - large food stores)	REF	Jul-95	17	85,880
China	Demonstration project (refrigeration - large food stores)	REF	Jul-95	17	158,400
China	Refrigeration mobile air conditioning (MAC) servicing	REF	May-96	19	462,600
Bolivarian Republic of Venezuela	Pilot programme in recovery and recycling of CFC-12 in MAC	REF	Mar-94	12	15,142
Region: EUR	Demonstration project on the replacement of CFC centrifugal chillers in Croatia, Macedonia, Romania, and Serbia and Montenegro	REF	Nov-05	47	1,149,255
Dominican Republic	Demonstration project in MACs	REF	Jul-95	17	220,000
Dominican Republic	Demonstration project in commercial refrigeration (food storage, distribution and retailing)	REF	Nov-95	18	74,000

Annex IV

ENABLING ACTIVITIES: NATIONAL STRATEGIES

1. This annex contains relevant decisions on (sector or national) strategies adopted by the Executive Committee of relevance to the HFC phase-down. The order of the decisions follows the order on which they appear in the document.

Refrigerant management plans (decision 31/48)

2. The Executive Committee decided:

A. *Already approved RMPs for LVCs*

- (a) To request national ozone officers, with the assistance of the implementing agency concerned, to review and assess the content, implementation to date and expected outcomes of their RMPs against their objective to phase out all consumption in the refrigeration sector according to the Montreal Protocol timetable. In undertaking this review, national ozone officers should:
 - (i) Calculate current and forecast future consumption in relation to the freeze, 50 per cent cut in 2005, 85 per cent cut in 2007 and phase-out in 2010 and calculate the size of consumption cuts in the refrigeration sector required to meet these targets;
 - (ii) Include forecast cuts in consumption attributable to the activities already approved under the RMP, including training activities and recovery/recycling;
 - (iii) Ensure that the current and expected future consumption of all subsectors, including the informal sector, small and medium-sized enterprises and mobile air conditioners, are included in the review;
 - (iv) For each activity identified, consider the cost and means of funding, including national financing;
 - (v) Ensure that the RMP and government strategy for delivering phase-out includes adequate provision for monitoring and reporting on progress;
- (b) That LVCs (or groups of LVCs) with already approved RMPs may submit to the Executive Committee requests for funding additional activities necessary to reduce consumption and thereby ensure compliance with the Protocol. Such additional activities should be essential parts of their comprehensive strategy for phase-out in the refrigeration sector. Additional funding shall not exceed 50 per cent of the funds approved for the original RMP or, where relevant, RMP components. With the possible exception of the post-2007 period noted in subparagraph (d) below, no further funding beyond this level, including funding related to retrofits, would be considered for activities in this sector;
- (c) That requests for additional funding consistent with subparagraph (b) above should be accompanied by:
 - (i) A justification for the additional activities to be funded in the context of the country's national phase-out strategy;

- (ii) A clear explanation of how this funding, together with the initial RMP funding and steps to be taken by the government, will ensure compliance with the Protocol's reduction steps and phase-out;
 - (iii) A commitment to achieve, without further requests for funding for the RMP, at least the 50 per cent reduction step in 2005 and the 85 per cent reduction step in 2007. This shall include a commitment by the country to restrict imports if necessary to achieve compliance with the reduction steps and to support RMP activities;
 - (iv) A commitment to annual reporting of progress in implementing the RMP and meeting the reduction steps;
- (d) That it will review in 2005 whether further assistance is needed for the post-2007 period, and what assistance the Fund might consider at that time to enable full compliance with the Protocol's phase-out requirements;

B. Preparation and approval of new RMPs for LVCs

- (e) That the project preparation phase for RMPs should, as intended by the existing guidelines, include a full survey of CFC consumption in all subsectors, the development of a comprehensive government phase-out strategy and a commitment by the government to enact regulations and legislation required for the effective implementation of activities to phase out the use of CFC refrigerants. To enable these preparatory activities, including the development of legislation and regulations, to be completed in full, the funding provided for the project preparation phase should be double the level traditionally provided;
- (f) That the provisions relating to existing RMPs in section A, subparagraphs (a), (c) and (d) above shall also apply to new RMPs submitted pursuant to this decision;
- (g) That in lieu of the ability given to already approved RMPs to request additional funds, the total level of funding for the implementation of new RMPs could be increased by up to 50 per cent compared to the level of RMP funding typically approved to date, with flexibility for the country in selecting and implementing the RMP components which it deems most relevant in order to meet its phase-out commitments. With the exception of the post-2007 phase noted in section A, subparagraph (d) above, no further funding beyond this level, including funding for retrofits, would be considered for activities in this sector;
- (h) That the following text should be added to the RMP guidelines (decision 23/15) after the last bullet in section 3.1:

“The elements and activities proposed for an RMP, whether they are to be funded by the Multilateral Fund or the country itself, should reflect the country's particular circumstances and address all relevant sectors including the informal sector. They should be sufficient to ensure fulfilment of the countries' control obligations at least up to and including the 85 per cent reduction in 2007, and should include mechanisms for reporting progress.”

C. RMPs for higher-volume-consuming countries

- (i) That, taking into account the need for large consuming countries to initiate planning for

dealing with this large and complex sector, as well as the related decision of the Meeting of the Parties, it will consider requests for funding the development of long-term strategies for the refrigeration sector for high-volume-consuming countries. High-volume-consuming countries that have not yet undertaken country programme updates should undertake this strategic RMP development in the context of such updates, consistent with any Executive Committee guidance on country programme updates;

- (j) That future Executive Committee decisions on funding the implementation of the elements of such RMP strategies should take into account the relative priority in national government planning of CFC reductions in the refrigeration sector and the availability of other reduction opportunities in meeting the country's control obligations;
- (k) That, in that context, the Executive Committee may consider whether certain activities often considered to be part of an RMP (such as training of customs officers) could be initiated before an RMP was developed.

Compendium of recommendations relevant to the evaluation of RMPs and NPPs in non-LVC-countries focusing on the refrigeration servicing sector (decision 49/6)

3. The Executive Committee decided:

- (a) To recommend that NOUs in planning and implementing refrigerant management plans and national or terminal phase-out plans consider, where feasible and in cooperation with other relevant government ministries/agencies:
 - (i) Updating and complementing ODS-related legislation where additional legal measures were needed and further specification of enforcement mechanisms had been identified, including, for example:
 - Banning the import and export of CFC-based second-hand refrigeration equipment;
 - Mandatory certification of technicians performing professional activities in refrigeration servicing;
 - Specification of a system of sanctions in cases of violation of legal regulations;
 - Improvement of the mechanisms for import and export quota allocations under the licensing system and the monitoring of their actual use;
 - Enhancement of cooperation between the NOU and the customs authorities;
 - (ii) Upgrading the curriculum for technical training in refrigeration, where needed, and providing all training institutions with the latest relevant information with regard to the general application of good practices to significantly reduce usage of ODS and to promote the use of alternatives;
- (b) To request implementing and bilateral agencies, when implementing ongoing national phase-out plans and when planning new national phase-out plans, to take into consideration decision 41/100 for the recovery and recycling part of national phase-out plans, in particular the following paragraphs:

- (i) “Concentrating recovery and reuse of CFCs in large-size commercial and industrial installations and mobile air conditioning sectors, if significant numbers of CFC-12-based systems still existed and the availability of CFC was strongly reduced by the adoption of effective import control measures;
 - (ii) Further exploring possibilities for facilitating cost-effective retrofitting and/or use of drop-in substitutes, possibly through incentive programmes;
 - (iii) Becoming more selective in providing new recovery, and in particular recycling, equipment by:
 - a. Establishing during project preparation a sounder estimate of the likely demand for recovery and recycling equipment;
 - b. Delivering equipment to the country only against firm orders and with significant cost participation by the workshops for equipment provided, using locally-assembled machines to the extent possible;
 - c. Procuring, delivering and distributing equipment in several stages, after reviewing the utilization of equipment delivered and verifying further demand;
 - d. Ensuring that adequate follow-up service and information was available to keep the recovery and recycling equipment in service;
 - (iv) Monitoring the use of equipment and knowledge acquired by the beneficiaries, on an ongoing basis, through regular consultations and collection of periodic reports from the workshops, to be carried out by national consultants in cooperation with associations of technicians. Progress reports based on such monitoring should be prepared annually by the consultant and/or the NOUs, in cooperation with the implementing agency, as provided in decision 31/48, and sufficient additional resources should be made available to allow for such follow-up and reporting work” (from decision 41/100);
- (c) To request bilateral and multilateral implementing agencies, in cooperation with the relevant national institutions:
- (i) To base the training of technicians on a strategy combining theoretical training with practical exercises during seminars with limited numbers of participants, and assisting in upgrading the curriculum of technical training institutes for refrigeration servicing in countries where it had not yet been done;
 - (ii) To pay full attention to safety aspects and the necessary modification or replacement of electrical components in countries where training in the use of hydrocarbons and particularly retrofitting was carried out; and
 - (iii) To select carefully the type of refrigerant identifiers to be purchased, taking into account preferences for small portable units, suitable for identifying different types of refrigerants, and including a test phase, where feasible, before buying larger numbers. Moreover, the administrative details of their distribution, usage

and storage should be planned in advance in order to avoid delays and to increase the effectiveness of their use;

- (d) To request the Fund Secretariat, in cooperation with bilateral and multilateral implementing agencies, to develop recommendations for indicative lists of appropriate equipment for the main target groups and share information about competitive suppliers, including from Article 5 countries; and
- (e) To request the Fund Secretariat, in cooperation with bilateral and multilateral implementing agencies, to develop an appropriate reporting format for the tracking of cumulative progress achieved in the annual work programmes, summarizing in standardized overview tables the information requested in decision 47/50, with a view to simplifying and rationalizing the overall reporting requirements and to report back to the 51st Meeting of the Executive Committee. Such assessment should contain a “comparison of what had been planned in the previous annual tranche and what had been achieved. The disbursement information should be provided cumulatively and data concerning actual or planned commitments could also be provided, as appropriate. The information should also specify how the relevant flexibility clause in the agreement was implemented and/or how to allocate unused funds from previous tranches” (from decision 47/50, subparagraph (b)(i)).

Adjusted funding policies of the Multilateral Fund adopted at the 35th meeting

4. At the 35th meeting the Executive Committee adopted the adjusted funding policies of the Multilateral Fund⁴⁹. Depending on the preference and readiness of the country concerned, the following two modalities to implement the adjusted funding policy of ensuring demonstrated relevance to compliance were proposed: funding of performance-based group-wide phase-out agreements; and funding of individual projects or stand-alone sector phase-out plans based on national phase-out strategies. These two modalities are described below.

Performance-based substance-wide phase-out agreements

5. Scope: A group-wide phase out agreement will encompass the total remaining consumption of the concerned controlled substance (e.g., halons, CFCs) in all its user sectors in the country. Depending on the residual consumption in each of these sectors, the agreement could consist of more than one sector strategy or if the residual consumption is exclusively in the refrigeration servicing sector, which is usually the case towards the completion of the CFC phase-out in the relevant manufacturing sectors, the agreement can be detailed as part of a RMP, as elaborated in decision 31/48.

6. Features: A performance-based group-wide agreement would need to include an action plan and a schedule of implementation of well-coordinated activities of industry and government, a level of funding to be agreed with the Executive Committee, a disbursement schedule by the Multilateral Fund against national ODS reduction targets, and a national management structure to ensure achievement of the objective of the agreements.

7. Advantages: The proposed agreements could offer the best chance to implement the funding policy of demonstrated relevance to compliance because funding would be tied to the compliance targets stipulated in the agreement (either according to the Montreal Protocol or, an accelerated schedule preferred by the country), and disbursement of resources would be tied to performance milestones.

⁴⁹ Annex XVI of document UNEP/OzL.Pro/ExCom/35/67.

8. The agreements would offer an alternative to the sometimes cumbersome project-by-project submission and approval process. They would also provide an assurance of predictable funding by the Multilateral Fund over a period of time, and would offer the country concerned with a flexibility to use the agreed funds to implement the activities to achieve the goals of the agreement.

9. Experience to date: The modality has been applied to the phase out of ODS in the production and other sectors and also followed to a certain extent in funding of RMPs in low-volume-consuming countries. The sector agreements approved so far are being implemented as planned, however, most of them were prepared and negotiated on a case-by-case basis over a long period of time.

10. Operational guidelines: It is time to review the need for standard guidelines, based on the experience of the Multilateral Fund, for the preparation, implementation and management of such agreements if this modality will be increasingly adopted.

11. Recommended further steps: It is recommended that in order to enable countries which are ready to adopt the modality of performance-based substance-wide agreement, the Secretariat should work with Article 5 countries, bilateral agencies and the implementing agencies to develop draft guidelines for the preparation, implementation and management of performance-based substance-wide phase-out agreements.

Funding of individual projects (including umbrella or TPMP projects) and stand-alone sector phase-out plans based on national compliance strategy

12. The current modality of funding of individual projects can continue to be applied however such funding should be made on condition that the requested project demonstrate its position in the national compliance strategy of phasing out the concerned controlled substance. It is understood that, until national compliance strategies have been developed, nothing will prevent the funding of individual projects or stand-alone sector phase-out plans, in accordance with the guidelines and procedures of the Fund, to the extent that these projects should indicate:

- (a) The impact of requested project on the compliance target (for instance, the CFC freeze, the 50 per cent reduction in 2005 and others);
- (b) The impact of the on-going projects on the balance of a consumption level of the substance to be determined by the Executive Committee in the discussion on the remaining ODS consumption eligible for funding and the mandatory consumption level for compliance with the specific target; and
- (c) The impact of the requested project on remaining national consumption of the substance(s) concerned.

13. The same requirement should be applied to a stand-alone sector phase out plan. These sector phase-out plans may include the total consumption of the concerned controlled substance, a plan of action by both industry and government and agreed funding level and disbursement schedule, as in the case of a substance-wide agreement. Since a controlled substance could be used in more than one sector, it is important to establish the direct impact of such projects on the national compliance targets of the controlled substance concerned.

14. Advantages: Requiring that funding requests be put in the context of a national compliance strategy provides the possibility of determining the impact of funding on the specific compliance target and of assessing the urgency of such requests, and therefore the funding priority. Funding projects

according to the national compliance strategy provides the government the possibility of determining the pace of phase out according to its domestic demand and supply of the controlled substances and readiness of its consumers. The steps that are proposed in the above Table for analysing the demonstrated relevance of projects to compliance will make up for the inadequacy in the current funding policy which does not link project impact with country compliance. These steps are also being proposed in the draft guidelines for the preparation of country programme updates. The proposed guidelines are intended to assist countries in the preparation of their national compliance strategies.

15. Operational guidelines: The proposed guidelines for the preparation of country programme updates which are being submitted by the Secretariat to the 34th Meeting could serve as operational guidelines for the preparation of national compliance strategies. This was also noted by the Executive Committee which decided that “updates to country programmes and refrigerant management plans would provide Article 5 countries with a mechanism for national phase out strategies and to encourage Article 5 countries to take advantage of that opportunity” (Decision 33/54).

16. Until these strategies are prepared, it is recommended that the sector context currently included in the project document be revised to provide an analysis of the demonstrated relevance of the requested funding to compliance.

Draft guidelines for the preparation of HCFC phase-out management plans incorporating HCFC surveys (decision 53/37(h))

17. The Executive Committee decided to adopt the following guidelines

- (a) Countries should adopt a staged approach to the implementation of an HCFC phase-out management plan (HPMP), within the framework of their over-arching-strategy;
- (b) As soon as possible and depending on the availability of resources, countries should employ the guidelines herein to develop, in detail, stage one of the HPMPs, which would address how countries would meet the freeze in 2013 and the 10 per cent reduction in 2015, with an estimate of related cost considerations and applying cost guidelines as they were developed;
- (c) The elaboration of stage one of the HPMP and subsequent stages should be developed as follows:
 - (i) For countries with consumption in the servicing sector only:
 - a. To be consistent with existing guidelines for the preparation of RMPs/RMP updates pursuant to decisions 31/48 and 35/57; and, if applicable, with the preparation of TPMPs pursuant to decision 45/54;
 - b. To contain commitments to achieve the 2013 and 2015 HCFC control measures and include a performance-based system for HPMPs based on the completion of activities in the HPMP to enable the annual release of funding for the HPMP;
 - (ii) For countries with manufacturing sectors using HCFCs, HPMPs should contain a national performance-based phase-out plan (NPP) with one or several substance or sector-based phase-out plans (SPP) consistent with decision 38/65 addressing consumption reduction levels sufficient to achieve the 2013 and 2015 HCFC

control measures and provide starting points for aggregate reductions, together with annual reduction targets;

- (d) For countries that chose to implement investment projects in advance of completion of the HPMP:
 - (i) The approval of each project should result in a phase-out of HCFCs to count against the consumption identified in the HPMP and no such projects could be approved after 2010 unless they were part of the HPMP;
 - (ii) If the individual project approach was used, the submission of the first project should provide an indication of how the demonstration projects related to the HPMP and an indication of when the HPMP would be submitted;
- (e) Consideration should be given to providing funding for assistance to include HCFC control measures in legislation, regulations and licensing systems as part of the funding of HPMP preparation as necessary and confirmation of the implementation of the same should be required as a prerequisite for funding implementation of the HPMP;
- (f) In cases where there were multiple implementing agencies in one country, a lead agency should be designated to coordinate the overall development of stage one of the HPMP;
- (g) HPMPs should contain cost information at the time of their submission based on and addressing:
 - (i) The most current HCFC cost guidelines at the time of submission;
 - (ii) Alternative cost scenarios based on different potential cut-off dates for new capacity if a specific cut-off date had not yet been decided, for funding eligibility of manufacturing facilities as specified in decision 53/37(k), as well as the current policy for a 25 July 1995 cut-off date;
 - (iii) Alternative cost scenarios for the operational and capital costs for second conversions;
 - (iv) The incremental costs of regulating import and supply to the market of HCFC dependent equipment once proven alternatives were commercially available in the country and describing the benefits to the servicing sector of associated reduced demand;
 - (v) Cost and benefit information based on the full range of alternatives considered, and associated ODP and other impacts on the environment including on the climate, taking into account global-warming potential, energy use and other relevant factors;
- (h) Countries and agencies were encouraged to explore potential financial incentives and opportunities for additional resources to maximize the environmental benefits from HPMPs pursuant to paragraph 11(b) of decision XIX/6 of the Nineteenth Meeting of the Parties;
- (i) HPMPs should address:

- (i) The use of institutional arrangements mentioned in decision 53/37(e) and (f);
 - (ii) The roles and responsibilities of associations of refrigeration technicians and other industry associations and how they could contribute to HCFC phase-out; and
- (j) HPMPs should, as a minimum, fulfil the data and information requirements, as applicable, listed in the indicative outline for the development of HPMPs, as set out in Annex XIX to the present report.
-