

**United Nations
Environment
Programme**Distr.
GENERALUNEP/OzL.Pro/ExCom/86/88
11 March 2020

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-sixth Meeting
Montreal, 2-6 November 2020
Postponed to 8-12 March 2021¹

**DRAFT GUIDELINES FOR THE PREPARATION OF HFC PHASE-DOWN PLANS FOR
ARTICLE 5 COUNTRIES (DECISION 84/54(a))****Background**

1. At its 84th meeting, the Executive Committee considered requests for preparatory funding for HFC phase-down plans and demonstration pilot projects included in the work programme amendments of one implementing agency.² During the discussion, there was consensus that those countries that had ratified the Kigali Amendment early might lose momentum in the implementation of their HFC activities if the preparation of HFC phase-down plans was not funded in a timely manner. Members also underscored that the phase-down plans would result in a sustained reduction of HFC consumption, limit growth in HFC consumption, and provide guidance on the type of commitment required from Governments in order to give the Executive Committee confidence that the HFC consumption phased out would remain phased out. Subsequently, the Committee considered a draft decision on the matter and, following a brief discussion, referred the matter to a contact group.

2. Based on the report submitted by the convener of the contact group, the Executive Committee requested the Secretariat to prepare, *inter alia*, draft guidelines for the preparation of HFC phase-down plans for Article 5 countries that would include an overarching strategy and a stage I to meet the freeze in consumption and the 10 per cent reduction, taking into account lessons learned during the preparation of guidelines for project preparation for HCFC phase-out management plans (HPMPs), including the sectors as defined in decision 56/16, on the understanding that:

- (a) The draft guidelines would address the need for policies and commitments on the part of Article 5 Parties to ensure limits on growth or reductions in HFC consumption that were sustained over time;

¹ Due to coronavirus disease (COVID-19)

² The issue is contained in paragraphs 16 to 20 of document UNEP/OzL.Pro/ExCom/84/32, "Overview of issues identified during project review".

- (b) The draft guidelines would include the proposed levels of funding for the preparation of stage I of HFC phase-down plans; and
- (c) Requests for funding for the preparation of stage I of HFC phase-down plans would be considered once the draft guidelines referred to in sub-paragraph (a), above, had been agreed by the Executive Committee (decision 84/54(a)).

3. The Executive Committee also requested the Secretariat to prepare a document discussing potential strategies, policy measures and commitments, as well as projects and activities that could be integrated within stage I of HFC phase-down plans for Article 5 countries to ensure limits on growth and reductions in HFC consumption, requested by decision 84/54(b).³

Structure of the document

4. In response to decision 84/54(a), the Secretariat has prepared the present document and submitted it to the 86th meeting.⁴

5. In preparing this document, the Secretariat took into consideration:

- (a) The draft guidelines for the preparation of HPMPs incorporating HCFC surveys⁵ (decision 54/39) and the cost structure for determining funding levels for the preparation of HCFC investment and associated activities⁶ (decision 56/16), noting that the two documents served as the basis for the preparation of stage I of all of the HPMPs for all Article 5 countries that have been approved;
- (b) The draft guidelines for funding the preparation of stage II of HPMPs⁷ (decision 71/42), which had already incorporated lessons learned during the preparation of stage I of HPMPs; and
- (c) The guidelines for enabling activities for the phase-down of HFCs⁸ approved at the 79th meeting (decision 79/46), noting *inter alia* that countries have the flexibility to undertake a range of enabling activities to help their national ozone units (NOUs) to fulfil their initial obligations under the Kigali Amendment.

6. The Secretariat also considered the lessons learned during the preparation of stages I and II of the HPMPs, as contained in the document on the revised desk study for the evaluation of HCFC phase-out management plan preparation activities to assist with the implementation of the Kigali Amendment,⁹ and reference is made in the present document to the lessons learned that could be used when preparing HFC phase-down plans.

³ In response to decision 84/54(b), document UNEP/OzL.Pro/ExCom/86/87 has been submitted to the 86th meeting.

⁴ The present document should have been submitted to the 85th meeting. In light of the COVID-19 pandemic, the Executive Committee agreed to postpone its 85th meeting, originally scheduled from 25 to 29 May 2020, and to hold it back-to-back with the 86th meeting in November 2020. In order to ensure continuity of compliance-related activities in Article 5 countries, and to reduce its workload when convened, the Executive Committee decided to implement an intersessional approval process for projects and activities that were to be submitted to the 85th meeting; agenda items that were not considered intersessionally would be included in the agenda of the 86th meeting. Given the evolution of the pandemic, the Executive Committee further deferred both meetings to March 2021.

⁵ UNEP/OzL.Pro/ExCom/54/53.

⁶ UNEP/OzL.Pro/ExCom/56/13.

⁷ UNEP/OzL.Pro/ExCom/71/55.

⁸ The draft guidelines are contained in document UNEP/OzL.Pro/ExCom/79/47.

⁹ UNEP/OzL.Pro/ExCom/83/8.

7. Furthermore, the Secretariat considered the experience gained and the results achieved from the national surveys of alternatives to ODS¹⁰ undertaken by 119 Article 5 countries, summarized in the document on the overall analysis of the results of the surveys of ODS,¹¹ noting that the scope of the surveys was to assist Article 5 countries to better understand their historical and predicted consumption trends for non-ODS alternatives, including both low- and high-global-warming-potential (GWP) alternatives, and their distribution by sector and subsector. When coupled with the implementation of their HPMPs, the surveys could provide the countries with a comprehensive overview of their national markets showing where ODS alternatives had been used and could be phased in.

8. The Secretariat also noted that although Article 5 countries have not yet started the preparation of their HFC phase-down plans, the 137 countries¹² (out of 144 Article 5 countries) with ongoing enabling activities for the phase-down of HFCs had already indicated their commitment to, at a minimum, meet the compliance obligations under the Kigali Amendment,¹³ as these countries have either ratified the amendment, or have submitted a letter of intent to make best efforts to ratify it as early as possible. In addition, some of the specific activities being implemented under the approved enabling activities¹⁴ could contribute to limiting the growth of HFC consumption and sustaining the reductions in consumption that will be achieved.

9. In preparing the present document, the Secretariat also kept in mind that between 2021 and 2030, it is highly likely that most Article 5 countries will be simultaneously implementing their HPMPs and stage I of their HFC phase-down plans. After 2030, Article 5 countries will be exclusively phasing down HFCs for an additional 15 years, while monitoring the sustainability of the HCFC phase-out including compliance with the servicing tail where applicable. Under this scenario, it seems relevant to develop a comprehensive strategy for meeting the Montreal Protocol compliance targets for two groups of substances that relate to each other (i.e., HCFCs and HFCs). In this regard, the present document also benefited from the information and analysis presented in several policy documents related to HFC phase-down that have been (or will be) considered by the Executive Committee, in particular:

- (a) UNEP/OzL.Pro/ExCom/82/64 Preliminary document on all aspects related to the refrigeration servicing sector that support the HFC phase-down (decision 80/76(c));
- (b) UNEP/OzL.Pro/ExCom/86/83, Overview of current monitoring, reporting, verification and enforceable licensing and quota systems developed with support from the Multilateral Fund (decision 84/85);

¹⁰ At its 74th meeting, the Executive Committee agreed on the funding modalities for undertaking national surveys of alternatives to ODS, approved the requests for funding surveys of ODS alternatives submitted by Article 5 countries to that meeting, and allowed the submission of funding requests for surveys from countries that had not submitted a request to the 74th meeting (decision 74/53).

¹¹ UNEP/OzL.Pro/ExCom/80/54.

¹² The Governments of Antigua and Barbuda, Central African Republic and India had submitted, under the 2021-2023 business plans of relevant agencies, a request for assistance for enabling activities for the phase-out of HFCs, including the mandatory official letter, with the intent to make best efforts to ratify the Kigali Amendment as early as possible.

¹³ In addition to implementing an HFC import/export licensing system, and HFC data reporting under Article 7 of the Montreal Protocol, the first compliance targets are the freeze in HFC consumption by 2024 and 10 per cent reduction in 2029 for Article 5 group 1 countries; the freeze in 2026 and 10 per cent reduction in 2032 for Article 5 group 2 countries.

¹⁴ These activities include *inter alia* country-specific activities aimed at supporting institutional arrangements, the review of licensing systems, data reporting on HFC consumption and production, and demonstration of non-investment activities; development and enforcement of policies and regulations to avoid market penetration of energy-inefficient refrigeration, air-conditioning and heat-pump equipment; promotion of access to energy-efficient technologies in those sectors; and targeted training on certification, safety and standards, awareness-raising and capacity building aimed at maintaining and enhancing the energy efficiency.

- (c) UNEP/OzL.Pro/ExCom/84/65, Analysis of the implications of parallel or integrated implementation of HCFC phase-out and HFC phase-down activities;
- (d) UNEP/OzL.Pro/ExCom/86/87, Potential strategies, policy measures and commitments, as well as projects and activities that could be integrated within stage I of HFC phase-down plans for Article 5 countries to ensure limits on growth and sustainable reductions in HFC consumption (decision 84/54(b)); and
- (e) UNEP/OzL.Pro/ExCom/86/89, Analysis of the level and modalities of funding for HFC phase-down in the refrigeration servicing sector (decisions 83/65(b) and 84/86(b)(ii)).

10. In developing the present document, the Secretariat has also kept in mind the potential benefits of undertaking an integrated implementation of HCFC phase-out and HFC phase-down wherever possible, and the various means and requirements for achieving integrated implementation set out in document UNEP/OzL.Pro/ExCom/86/87, including integrated compliance strategies, should the Executive Committee decide to adopt such an approach.

11. The document contains two parts:

Part I Key components of HFC phase-down plans; and

Part II Funding for the preparation of HFC phase-down plans

PART I KEY COMPONENTS OF HFC PHASE-DOWN PLANS

12. As was the case for CFC and HCFC phase-out plans, the national authorities responsible for the implementation of the Montreal Protocol will conduct meetings with relevant stakeholders during the preparation of stage I of HFC phase-down plans¹⁵ to: develop the overarching strategy for the phase-down of HFCs; develop the methodology and establish a framework for HFC data collection, analysis and reporting; and review the policies and regulations in place and identify additional ones that will provide the legal framework for meeting their compliance obligations under the Kigali Amendment. Article 5 countries will also need to identify the phase-out projects and activities that will limit the growth of HFC consumption and reduce that same consumption, taking into account the sectoral distribution of HFCs and the availability of cost-effective and sustainable alternative technologies; and review the monitoring and reporting mechanisms in place with the aim of strengthening them as required.

13. Unlike the CFC and HCFC phase-out plans, however, during the period from 2021 to 2030 the majority of Article 5 countries will be preparing and implementing multiple stages of HPMPs to reduce the consumption of HCFCs until the complete phase-out is achieved in 2030 (except for the servicing tail) and simultaneously preparing and implementing stage I of HFC phase-down plans to meet the first compliance obligations under the Kigali Amendment.¹⁶ It will therefore be necessary for Article 5 countries to undertake coordinated preparation and implementation of an overarching strategy that encompasses a holistic approach for the HCFC phase-out and HFC phase-down, ensuring to the extent possible that the HCFC

¹⁵ As reported in document UNEP/OzL.Pro/ExCom/83/8, engagement from the HCFC user sectors and other stakeholders to implement the agreed overarching strategy was ensured through an extensive consultation process carried out during HPMP preparation. There were consultations with the NOU and relevant stakeholders (e.g., the industry and trade associations) for the identification of key inputs for the preparation of the HPMP.

¹⁶ As reported in document UNEP/OzL.Pro/ExCom/83/8, activities in the refrigeration servicing sector will have synergies between HCFC phase-out and HFC phase-down, as many of those activities (e.g., training of technicians, recovery and reclamation of refrigerant, development of standards for the installation and operation of low-GWP equipment) have an impact on all refrigerants and alternatives used in the countries. Therefore, the preparatory funding for HFC phase-down plans must give due consideration to the existing activities already being implemented in the sector under HCFC phase-out.

phase-out activities do not result in an increased consumption of HFCs,¹⁷ and avoiding overlap between phase-out and phase-down activities, particularly in the servicing sector, where 90 to 100 Article 5 countries (mainly low-volume consuming (LVC) countries) have their consumption of HCFC and HFC. In addition, Article 5 countries would need to consider the administrative, reporting, verification and monitoring requirements associated with the submission and implementation of multiple stages and tranches of HPMPs and HFC phase-down plans running in parallel.¹⁸

Overarching strategy for HFC phase-down

14. The overlapping schedules of HCFC phase-out and HFC phase-down present an opportunity for Article 5 countries to develop an integrated, cost-effective, and sustained strategy that addresses the reduction of both groups of substances, in particular in the refrigeration servicing sector. This integrated strategy would make use of the already established institutional framework to phase out HCFCs and ensure that activities being implemented under the HPMPs are at the same time directed at reducing the potential increase in the use of high-GWP HFCs.

15. The preparation of HFC phase-down plans should build upon the experiences gained during the preparation of HPMPs, in the areas of developing regulatory measures, surveys of HCFC consumption, the overarching strategy, and the plan of action for the first stage of the plan. It should also give due consideration to the interlinkages between HCFC phase-out and HFC phase-down by using to the extent possible the existing HPMP infrastructure for HFC phase-down; factoring in the impact of HCFC phase-out activities on HFC consumption; and implementing activities that contribute to both HCFC phase-out and HFC phase-down.

16. Furthermore, similar to the approach to phasing out HCFCs,¹⁹ a staged approach provides the best opportunity for implementing HFC phase-down plans given the long timeline (2045 for Article 5 group 1 countries and 2047 for Article 5 group 2 countries) for meeting compliance targets, and the evolving availability of alternatives to HFCs in some applications in the local market. This will allow Article 5 countries to establish their priorities according to their specific national circumstances.

17. The overarching strategy for HFC phase-down should be based on a robust and sound reporting and regulatory framework, as described below.

Establishment of an HFC data collection and reporting framework

18. Previous ODS alternatives surveys submitted by 119 Article 5 countries provided the first set of HFC consumption data collected by NOUs. However, to prepare their HFC phase-down plans Article 5 countries will require more detailed, updated, and comprehensive information on HFC consumption and its sectoral distribution, identification of the largest HFC-based equipment users, and analysis of the market

¹⁷ For example, in the residential air-conditioning sector, R-410A is currently the main alternative to HCFC-22 while R-404A is an alternative to HCFC-22 in several commercial refrigeration applications; and HFC-245fa is a well-known alternative to HCFC-141b in spray foam applications.

¹⁸ Currently, implementation and monitoring of overlapping stages I and II of HPMPs has proven challenging in several countries; adding HFC phase-down plans will increase the administrative burden even though in many countries most of the activities in these plans are in the same sector (i.e., refrigeration servicing sector in LVC countries).

¹⁹ When the Parties to the Montreal Protocol adopted decision XIX/6 on the acceleration of the HCFC phase-out, the Executive Committee decided that a staged approach to phase out HCFCs would allow Article 5 countries to prioritize some uses where substitute technologies were readily available and economically viable, while giving more time to address uncertainties related to alternatives to HCFCs in other applications (i.e., availability, maturity, cost-effectiveness and other environmental considerations).

trends. The surveys will also allow for a better estimation of the magnitude of the HFC phase-down to be addressed, noting that information on HFC consumption has been limited so far.

19. Therefore, as a first step, Article 5 countries would need to build on their existing data gathering methods and develop an approach for a solid framework to collect, analyse, and report data on HFC consumption (and production, when applicable), identifying the sectors and subsectors where HFCs are used. This will contribute to an improved approach for estimating the country's HFC baseline for compliance in advance of reporting consumption for the base years,²⁰ and in identifying trends in the market for HFCs.²¹

20. In accomplishing this task, many Article 5 countries are building upon the actions they initiated during the preparation and implementation of the surveys on ODS alternatives and the enabling activities for the phase-down of HFCs. As a result, 61 Article 5 countries that have ratified the Kigali Amendment (out of 75 countries), and 23 Article 5 countries that have not yet ratified it,²² reported sector consumption of HFCs under their 2019 country programme reports.²³

21. Similar to what has been described in the guidelines for the preparation of HPMPs, it is fundamental that comprehensive information is compiled and evaluated during the preparation of the HFC phase-down plans to ensure that the resulting overarching strategy clearly describes the actions required to meet the first control measures for HFC phase-down. Thus, HFC consumption data collected through field surveys or other means should be verified against the reports submitted by Article 5 countries to the Fund Secretariat (progress reports on the implementation of the country programme) and the Ozone Secretariat (under Article 7 of the Montreal Protocol) to ensure consistency.

Extending the HCFC import/export licensing system

22. Concurrent with the establishment of an HFC reporting framework, Article 5 countries must include HFCs under their current operational import/export licensing systems, which will support data collection and reporting, enable the monitoring of HFC imports and exports, and facilitate the issuance of import controls and other measures, especially for HFC applications where non-HFC alternatives are more prominent. Establishing the HFC licensing systems is consistent with the approach followed during the preparation HPMPs, where assistance to finalize the process of forming the HCFC licensing systems was included in the project preparation funding provided.²⁴

²⁰ As reported in document UNEP/OzL.Pro/ExCom/83/8, in several countries it was found that the estimated HCFC baselines for compliance were not accurate due to different reasons such as large stockpiles or lack of knowledge about the real demand for HCFCs in the user sectors. In consequence, starting points for aggregate reductions in HCFCs had to be reviewed during the implementation of HPMPs. Therefore, to prevent major readjustment of the estimated consumption data, a review of the historical consumption of CFCs and HCFCs, together with an analysis of key socio-economic parameters of the countries (e.g., distribution of the population in urban and rural areas; location of economic activities demanding refrigeration and air-conditioning equipment; population connected to the electricity grid) could be undertaken during the preparatory phases for HFC phase-down.

²¹ As reported in document UNEP/OzL.Pro/ExCom/83/8, during the implementation of the HPMPs, it has been noticed that initial estimations and recording of HCFC consumption during the base years were not always accurate and that the licensing and quota systems had deficiencies in their design (e.g., licenses with a duration of longer than a year) or in their implementation (e.g., incorrect use of codes for import, or use of the same codes for different substances). These issues have been gradually identified and corrected by the Governments.

²² The 84 Article 5 countries consist of 53 LVC countries, accounting for 66.8 per cent of all LVC countries and 68.8 per cent of their aggregated HCFC baselines, and 31 non-LVC countries, accounting for 33.2 per cent of all non-LVC countries and 14.3 per cent of their aggregated HCFC baselines.

²³ Country programme data and prospects for compliance (UNEP/OzL.Pro/ExCom/86/8).

²⁴ As reported in document UNEP/OzL.Pro/ExCom/83/8, while some countries encountered delays in adopting HCFC import/export licensing and quota system, having such a system as a precondition for the approval of funds helped to

23. This action is particularly important given that by 1 January 2019 (and no later than 1 January 2021), Article 5 countries that have ratified the Kigali Amendment must implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annex F, as established under Article 4B of the Montreal Protocol. The implementation of enabling activities for HFC phase-down approved for several Article 5 countries included the review of existing licensing systems and existing ODS regulatory measures paving the way for the countries' timely implementation of these adjustments. The Executive Committee may wish to note that 33 Article 5 countries that have ratified the Kigali Amendment and three that have not yet ratified it have already reported the establishment of an operational licensing system for HFCs to the Ozone Secretariat.

24. While Article 4B of the Montreal Protocol does not require the establishment of a quota system, the quota systems for HCFCs have proven to be very effective in controlling imports of such substances and facilitating the fulfilment of compliance obligations under the Montreal Protocol. According to the experience gained so far, Article 5 countries may also consider extending the HCFC quota systems to HFCs as early as possible.

25. In addition, Article 5 countries could consider establishing other regulatory measures to prevent the uncontrolled growth of HFC consumption, including mandatory reporting by HFC importers and exporters, registration of the import of HFC-based refrigeration and air-conditioning (RAC) equipment which could be used to forecast the HFC demand for servicing such equipment; initiating controls to prevent the dumping of used RAC equipment that would trigger future consumption of HFCs; and facilitating the issuance of import bans for HFC-RAC equipment that could become obsolete (e.g., when alternative non-HFC-based RAC equipment becomes available).²⁵

Projects and activities related to the phase-down of HFCs

26. During the preparation and implementation of HFC phase-down plans, the remaining HCFC consumption in the majority of Article 5 countries will be in the refrigeration servicing sector, the sector which also has the largest consumption of HFCs (i.e., based on the surveys of ODS alternatives submitted by 119 Article 5 countries, it is expected that over 70 per cent of the consumption of HFCs in non-LVC countries and over 95 per cent of consumption in LVC countries will be used in the refrigeration servicing sector).²⁶

27. Accordingly, the preparation of HFC phase-down could present an opportunity for Article 5 countries to plan comprehensive, cost-effective and long-term strategies for their refrigeration servicing sector, taking into account the proper management of all the refrigerants being used, and the need to strengthen relevant institutions and stakeholders, to ensure a sustained replacement of ozone-depleting and/or high-GWP refrigerants by low-GWP refrigerants. Formulating a comprehensive overarching refrigerant management strategy for the servicing sector, strengthening and enhancing the infrastructure and institutions in place, and avoiding (as much as feasible) the replacement of HCFC-based technologies

expedite the process. No indication was found that the establishment of these systems suffered delays due to insufficient funding in the preparatory process.

²⁵ As reported in document UNEP/OzL.Pro/ExCom/83/8, during the preparatory process, Article 5 countries identified other relevant policies for consideration during the implementation of their HPMPS, *inter alia*: amending regulations for controlling the use, imports, manufacturing, assembly and installation of products containing HCFCs; prohibiting the establishment and expansion of new HCFC-based manufacturing capacities, establishing an incentive system for promoting the use of alternatives to HCFCs; the certification of technicians for handling HCFCs; prohibiting the manufacturing, assembly and import of HCFC-based air-conditioners once local manufacturers have been converted; standards and labelling programmes; and mandatory leak detection and containment of all controlled substances used in in refrigeration and air-conditioning systems.

²⁶ It is to be noted that surveys on ODS alternatives were not submitted by the largest consuming countries, including Brazil, China and India.

with low-GWP HFC-based technologies will contribute to reducing the future servicing needs with high-GWP HFCs.

28. Issues that Article 5 countries will need to consider that are specifically related to the refrigeration servicing sector include, *inter alia*:

- (a) Identifying and adapting to local conditions and implementing relevant standards, codes and norms that facilitate the safe adoption, operation and servicing of low-GWP-based alternative technologies and refrigerants;
- (b) Developing a regulatory framework for refrigerants management including, *inter alia*, certification of technicians, licensing of service enterprises/workshops, measures to support refrigerant recovery, recycling and reclaiming programmes (e.g., control of intentional refrigerant venting), labelling, record keeping and reporting, enforcement and monitoring tools, and capacity-building for all relevant stakeholders;
- (c) Reviewing the curricula of the training programmes for customs and enforcement officers addressing all the obligations under the Montreal Protocol; and developing a common curriculum and training programmes that can be updated as required;
- (d) Strengthening the capacity of the vocational training systems and certification bodies through a review of the curricula of the training programmes for refrigeration technicians including issues related to reducing the emission of refrigerants into the atmosphere, reducing energy consumption based on well-maintained and well-serviced equipment, latest technology developments, and addressing safety issues related to the flammability and/or toxicity of the refrigerants being phased in;
- (e) Developing (or strengthening if already in place) a self-sustained refrigerant containment strategy considering, *inter alia*: the capability of the equipment and ancillary components to recover, recycle or reclaim both HCFCs and HFCs; proper management of the non-reusable refrigerants recovered; an analysis of the benefits and challenges of recovering, recycling and reclaiming different types of refrigerants; and an assessment of the economic feasibility of reclamation facilities;
- (f) Strengthening technical support for the assembly, installation and initial-charge subsector as it could influence the introduction of refrigeration technologies;
- (g) Strengthening RAC associations, ensuring their engagement in the implementation of activities and in promoting sound practices in local markets; and assessing the long-term sustainability of activities implemented in the refrigeration servicing sector through business models and/or additional resources; and
- (h) Introducing monitoring and reporting tools to measure the impacts of activities and programmes in the servicing sector; developing a directory for the servicing sector that includes licensed and certified technicians, enterprises, training centres, and distributors of refrigerant and equipment; and utilizing the global products developed by UNEP CAP and other international organizations to assist the refrigeration servicing sector.

29. For most of the 50 Article 5 countries with HCFC-based manufacturing enterprises, the use of HCFCs in the manufacturing sector has been or will be completely phased out once the approved conversion projects have been completed. For several countries, additional activities would be required to complete the phase-out of HCFCs used in the manufacturing sector (mainly in the foam and RAC sectors).

30. The extent and the timing of the implementation of HFC investment projects will depend on *inter alia* the need for these conversions to ensure compliance with the Montreal Protocol, the availability of cost-effective alternative technologies in local markets, and the availability of the components (e.g., compressors, heat exchangers, controls) required for the conversion of the manufacturing lines. As some of the HCFC phase-out investment projects are nearing completion, HFC phase-down investment projects could be gradually initiated.

31. Given the broader use of HFCs in the manufacturing sector as compared to HCFCs, it is expected that HFC investment projects will be implemented separately from HCFC investment projects. However, Article 5 countries will need to consider potential opportunities for integrated implementation of investment projects in enterprises that manufacture both HCFC-based and HFC-based equipment/products and wish to convert both technologies, following a sector approach. Investment projects that could be considered include but are not limited to, *inter alia*:

- (a) Conversion of enterprises manufacturing polyurethane foam based on HCFC-141b, HFC-245fa and/or HFC-365mfc/HFC-227ea polyol systems to low-GWP polyol systems currently available for all PU foam applications;
- (b) Conversion of enterprises manufacturing extruded polystyrene foam (XPS) foam applications based on HCFC-22/HCFC-142b and HFC-134a/HFC-152 blowing agents to low-GWP technologies currently available;
- (c) Integration of enterprises manufacturing room and/or commercial AC equipment with production lines based on HCFC-22 and R-410A refrigerants, with the potential of reducing conversion costs associated with *inter alia*, project design; safety if the alternative selected is flammable; components (e.g., compressors and heat exchangers due to economies of scale), and training, certification, verification and commissioning;
- (d) Integration of ongoing conversion of enterprises manufacturing commercial refrigeration with production lines based on HCFC-22 refrigerant with other lines based on HFC-based refrigerants (e.g., HFC-134a and/or R-404A), ensuring the phase-out of both HCFC and HFC, with potential reductions in the conversion costs; and
- (e) Conversion of enterprises manufacturing chillers or using controlled substances in aerosol, solvent and/or fire-fighting applications, on a case-by-case basis, given that the amount of controlled substances used in these sectors is relatively small.

PART II FUNDING FOR THE PREPARATION OF HFC PHASE-DOWN PLANS

32. The funding structure for the preparation of stage I of HFC phase-down plans is based on the funding modalities for the preparation of HPMPs outlined in decisions 56/16(d) and 71/42(f). Funding was provided separately for the development of the overall HCFC phase-out management plan, including the overarching strategy and the strategy for the phase-out of HCFCs used in the servicing sector (mainly for LVC countries, as the sole sector of HCFC consumption), and for the conversion of manufacturing enterprises (i.e., investment projects). The HCFC consumption baseline was used as a proxy for estimating the funding level required for the preparation of the HPMPs, which proved to be a good indicator during the phase-out of CFCs.²⁷

²⁷ A similar approach was taken when analysing the funding requirements for enabling activities as described in document UNEP/OzL.Pro/ExCom/79/49, Draft procedures for Article 5 countries that have HFC consumption baseline years from 2020 to 2022 in accessing additional contributions for enabling activities.

33. Based on the above considerations, the funding levels for the preparation of the HPMPs (excluding investment projects) agreed by the Executive Committee were as follows:

- (a) US \$30,000 for countries with zero consumption of HCFCs;
- (b) US \$85,000 for countries with mainly HCFC-22 consumption only in the refrigeration servicing sector or consumption below 6 ODP tonnes/year;
- (c) US \$150,000 for countries with medium consumption, between 6 ODP tonnes/year and 100 ODP tonnes/year; and
- (d) US \$195,000 for countries with consumption higher than 100 ODP tonnes/year.

34. In the absence of HFC baselines (which will be established only in 2023 for Article 5 group 1 countries and in 2027 for Article 5 group 2 countries), the established HCFC baselines provide a fair basis for classifying countries into funding categories for the preparation of HFC phase-down plans. Noting the broad range of the HCFC baselines for consumption that was used for grouping countries for funding the preparation of the HPMPs, the Secretariat considered it relevant to adjust the range of the HCFC baselines that was used for grouping the countries, so that countries with similar consumption levels are grouped together to ensure a more equitable distribution of funding across consumption levels.

35. Taking into account the activities required for the preparation of the overarching strategy for stage I of the HFC phase-down plans as described in Part I of the present document, preparation of the actual HFC phase-down plans will be more complex than the preparation of HPMPs for the following reasons:

- (a) Up to 2030, the majority of Article 5 countries will be implementing concurrently projects and activities for phasing out HCFCs and phasing down HFCs. Therefore, it will be relevant to develop a comprehensive strategy for meeting the Montreal Protocol compliance targets for HCFCs and HFCs, and taking into account the ongoing projects and activities for the phase-out of HCFCs and the new projects and activities to be approved addressing HCFC and HFC consumption;
- (b) The preparation of the full HFC phase-down plan includes a national survey of HFC consumption and production where applicable; determining the HFC baseline for compliance (and eventual starting point for aggregate reductions) is a more complex exercise compared to the HPMPs as these will be established only in future years and unlike HCFCs, countries were not obliged to report HFC consumption data prior to their ratification of the Kigali Amendment; the metrics are in CO₂-equivalent tonnes rather than ODP tonnes; there are many more HFCs and HFC-blends being controlled than HCFCs (where the consumption of HCFC-22, HCFC-141b and HCFC-142b represented over 99 per cent of the total consumption of HCFCs, and over 90 Article 5 countries only consumed HCFC-22); there are controlled HFCs and HFC-blends that are being used as alternatives to HCFCs and HFCs; and HFCs are used in several more applications than HCFCs;
- (c) Article 5 countries need to act swiftly to further develop, adapt and enforce relevant legislation and/or regulations and to review of licensing and quota systems for HFCs, as early action will limit the growth in their consumption and production where applicable, and make reductions in HFC consumption sustainable;
- (d) It will be necessary to develop and implement policies to support the selection of alternative technologies taking into consideration enterprises and national requirements and potential impacts to the environment particularly on the climate and energy efficiency,

noting that there are still a limited number of alternative technologies available for some applications;

- (e) It will be necessary to investigate possible financial incentives and opportunities for co-financing to, *inter alia*, bring additional climate benefits to HFC phase-out as well as the potential for parallel and integrated implementation of HCFC phase-out and HFC phase-down;
- (f) It will be necessary to coordinate with all industry associations to contribute to the HFC phase-down and the concurrent implementation of HPMPs.

36. In determining the funding level that would allow Article 5 countries to prepare the overarching strategy for stage I of the HFC phase-down plans, the Secretariat took into account the experience gained on the implementation of the guidelines agreed for funding the preparation of stage I of the HPMPs, surveys of ODS alternatives, and enabling activities for the phase-down of HFCs, and undertook a bottom up analysis to assess the funding levels of the main activities.

37. Based on the review, the grouping of countries based on their HCFC baselines for compliance was expanded to seven groups; and the level of funding for each grouping of countries was adjusted taking into consideration the complexity of the work and the activities previously funded. Table 1 shows the proposed funding levels for the preparation of the overarching strategy for stage I of the HFC phase-down plans for Article 5 countries.

Table 1. Funding levels for the preparation of the overarching strategy for stage I of the HFC phase-down plans for Article 5 countries

HCFC baseline (ODP tonnes)	Number of countries	Unitary cost (US \$)	Total cost (US \$)
Below 1	22	100,000	2,200,000
1 and up to 6	36	130,000	4,680,000
Above 6 and up to 20	30	170,000	5,100,000
Above 20 and up to 100	32	190,000	6,080,000
Above 100 and up to 1,000*	19	220,000	4,180,000
Above 1,000 and up to 2,000	4	230,000	920,000
Above 2,000	1	case by case	n/a
Total	144		23,160,000

*Excluding Singapore, Republic of Korea, and United Arab Emirates, which do not receive funding from the Multilateral Fund.

38. Based on the experience gained and lessons learned during the preparation of the HPMPs, and the results achieved during their implementation so far, the following two elements may be requested by the Executive Committee as prerequisites for approval of funding for stage I of the HFC phase-down plans:

- (a) Confirmation that an enforceable national system of licensing and quotas for HFC imports and, where applicable, production and exports, is in place, and that the system is capable of ensuring the country's compliance with the Montreal Protocol HFC phase-down schedule for the duration of the HFC phase-down agreement, consistent with decision 63/17;²⁸ and
- (b) A commitment to limit the growth in HFC consumption through policy and regulatory measures, and through voluntary measures to be described in stage I of the HFC

²⁸ "That, for all submissions from the 68th meeting onwards, confirmation has been received from the Government that an enforceable national system of licensing and quotas for HCFC imports and, where applicable, production and exports, is in place, and that the system is capable of ensuring the country's compliance with the Montreal Protocol HCFC phase-out schedule for the duration of this agreement."

phase down plan, when submitted for consideration by the Executive Committee.

39. With regard to funding levels for the preparation of HFC investment projects, the Executive Committee may wish to maintain the funding levels already agreed for HCFC investment projects, in line with decision 56/16(d) and (f), as described below:

- (a) One enterprise to be converted in a manufacturing sector: US \$30,000;
- (b) Two enterprises to be converted in a manufacturing sector: US \$60,000;
- (c) Three to 14 enterprises to be converted in a manufacturing sector: US \$80,000;
- (d) Fifteen or more enterprises to be converted in a manufacturing sector: US \$150,000; and
- (e) To limit the maximum funding provided for the preparation of the investment component for any country according to the table below:

HCFC baseline (ODP tonnes)	Funding limit (US \$)
Up to 100	100,000
101–300	200,000
301–500	250,000
501–1,000	300,000
1,001 and above	400,000

Recommendation

40. The Executive Committee may wish:

- (a) To note document UNEP/OzL.Pro/ExCom/86/88 on the draft guidelines for the preparation of HFC phase-down plans for Article 5 countries;
- (b) To include in the funding for the preparation of an overarching strategy for stage I of the HFC phase-down assistance for:
 - (i) The development of legislation, policies and regulations as required to extend the existing operational import/export licensing and quota systems to controlled substances under Annex F (HFCs) of the Montreal Protocol, and to ensure limits on growth or reductions in HFC consumption that were sustained over time;
 - (ii) The carrying out of a survey of HFC consumption and their sectoral distribution, and comprehensive surveys of enterprises in the manufacturing and servicing sectors, with analysis of the data to estimate the HFC baselines for compliance;
 - (iii) The development and finalization of the overarching strategy for stage I of the HFC phase-down plan to address the freeze and 10 per cent reduction in HFC consumption;
 - (iv) The development of a strategy and plan of action related to the refrigeration servicing sector particularly for those Article 5 countries where the majority of the HFC consumption is in this sector;
- (c) To provide funding for the elements described in sub-paragraph (b)(i) to (iv) above as specified in the table below, based on the country's HCFC consumption baseline:

HCFC baseline (ODP tonnes)	Funding for preparation of stage I of the HFC phase-down plan (US \$)
Below 1	100,000
1 and up to 6	130,000
Above 6 and up to 20	170,000
Above 20 and up to 100	190,000
Above 100 and up to 1,000	220,000
Above 1,000 and up to 2,000	230,000
Above 2,000	case by case

- (d) To determine and provide funding for the preparation of stage I of any regional HFC phase-down plans and those countries with an HCFC baseline consumption above 2,000 ODP tonnes on a case-by-case basis;
- (e) To provide funding for any Article 5 country with a manufacturing sector using HFCs according to the number of manufacturing enterprises to be converted in line with decision 56/16(d) and (f), as follows:
- (i) One enterprise to be converted in a manufacturing sector: US \$30,000;
 - (ii) Two enterprises to be converted in a manufacturing sector: US \$60,000;
 - (iii) Three to 14 enterprises to be converted in a manufacturing sector: US \$80,000;
 - (iv) Fifteen or more enterprises to be converted in a manufacturing sector: US \$150,000; and
 - (v) To limit the maximum funding provided for the preparation of the investment component for any country according to the table below:

HCFC baseline (ODP tonnes)	Funding limit (US \$)
Up to 100	100,000
101–300	200,000
301–500	250,000
501–1,000	300,000
1,001 and above	400,000

- (f) To request bilateral and implementing agencies, when submitting stage I of the HFC phase-down plans on behalf of Article 5 countries, to include:
- (i) Confirmation that the country has an established and enforceable national system of licensing and quotas for monitoring HFC imports/exports in place, consistent with decision 63/17;
 - (ii) The Government's commitment to ensure limits on growth in HFC consumption and to sustained over time the phase-out of HFCs achieved; and
- (g) To request the Secretariat to prepare, with the assistance of the bilateral and implementing agencies, a Guide for preparation of stage I of HFC phase-down plans that could be used by Article 5 countries.