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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-seventh Meeting
Montreal, 28 June-2 July 2021[1]

FRAMEWORK FOR CONSULTATIONS WITH RELEVANT FUNDS AND FINANCIAL INSTITUTIONS TO EXPLORE THE MOBILIZATION OF ADDITIONAL FINANCIAL RESOURCES FOR MAINTAINING OR ENHANCING ENERGY EFFICIENCY WHEN REPLACING HFCs WITH LOW-GLOBAL-WARMING-POTENTIAL REFRIGERANTS IN THE REFRIGERATION AND AIR-CONDITIONING SECTOR (DECISION 86/94)

Note by the Secretariat

Background

1. The contingency plan for conducting the 85th and 86th[2] meetings, has been modified and adapted on several occasions according to the evolution of the COVID-19 pandemic; the last modification of March 2021[3] presented the agreed procedures including to hold the postponed 86th meeting through *inter alia* formal online meetings[4] to consider several items of the agenda, including item 13(g)(ii) on the Framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing energy efficiency when replacing HFCs with low-global-warming-potential refrigerants in the refrigeration and air-conditioning sector (decision 84/89).

2. Discussions on agenda item 13(g)(ii) were based on document UNEP/OzL.Pro/ExCom/86/93, first at the formal online meeting and then in a contact group.

Summary of the discussion at the 86th meeting

3. During the formal online meeting, the representative of the Secretariat introduced document UNEP/OzL.Pro/ExCom/86/93. Several members expressed appreciation for the work of the Secretariat in preparing a document on an issue of importance. Although energy-efficiency matters were not compliance-related, failure to tackle them would contribute to some countries remaining dependent on

[1] Online meetings and an intersessional approval process will be held in June and July 2021 due to coronavirus disease (COVID-19)
[2] Planned for 2-6 November 2020, postponed to 8-12 March 2021
[3] As contained in paragraph 4 of document UNEP/OzL.Pro/ExCom/86/IAPext/Rev.1
[4] Formal online meetings (with simultaneous interpretation) were held on 6, 9, 12 and 16 April 2021.

equipment using high-global-warming-potential (GWP) HFCs; actions designed to enhance energy efficiency, such as upgrades to manufacturing lines, should be addressed holistically, and that solutions should be found to provide countries with adequate funding support for the replacement of HFCs. As in the past, an approach whereby the Executive Committee gathered knowledge and experience through the implementation of projects could be considered.

4. Many members mentioned that the Secretariat should build on the information-gathering efforts undertaken for the document, including by continuing to consult with other financial organizations and by seeking the views of the Technology and Economic Assessment Panel (TEAP) and external experts on emerging energy-efficient technologies. Cooperating with other financial institutions would enable the Multilateral Fund to have a greater impact than it could achieve with its own resources. While it made sense to approach institutions such as the Global Environment Facility (GEF) and the Green Climate Fund (GCF), the Secretariat could also approach other partners, including multilateral climate funds and multilateral and regional development banks. It would also be helpful to find out from potential partners what activities they would consider for funding and what their requirements were in terms; it would also be interesting to know the types of arrangements that might be possible with other financial institutions. Furthermore, the implementing agencies should be involved in defining the framework for consultations, in light of their knowledge of the procedures and operating practices of some of the financial institutions to be approached. Further, it was noted that cost analysis that would be undertaken in relation to EE should also take into consideration payback that would result in energy efficient operation of equipment.

5. A few members said that the document had gone beyond the mandate given to it by decision 84/89. The Executive Committee should focus initially on responding to decision XXX/5 and decision 84/89, before considering other concerns. It was also mentioned that limited information was provided in the document that could constitute the basis for a framework for consultations with funds and financial institutions, although several elements were missing. Other members proposed that the Secretariat prepares, for the first meeting in 2022, a report identifying options, both within the Multilateral Fund and through work with other financial institutions, for the inclusion of innovative funding models, such as incentives and concessional finance, along with estimates of the costs and benefits of potential interventions to maintain or enhance energy efficiency through installation and maintenance of equipment, manufacturing sector conversions and broad energy-efficiency policy measures.

6. During the discussions, working text was proposed for providing additional guidance to the Secretariat for preparing a report on options available for the mobilization of additional financial resources for maintaining and/or enhancing energy efficiency when phasing out HFCs in the refrigeration and air-conditioning sector including consideration of innovative funding models such as incentives and concessional finance, and estimate costs and benefits of potential interventions. Working text was also proposed for inviting members to submit their views on the issues in relation to reaching out to other funds and institutions for the purpose of mobilizing resources to support enhancing energy efficiency when phasing down HFCs and requested the Secretariat to compile all submissions received from members and continue discussions at the 87th meeting.

7. As the discussion could not be concluded during the formal online meeting, the Committee agreed to reconstitute the contact group on energy efficiency to discuss the matter further. During the discussion in the contact group, discussions were held on different aspects presented in the working text and changes to the text were proposed. The discussions, however, could not be concluded. As a result, the convener informed the Chair that the group had been unable to arrive at a conclusion, and proposed that the matter be taken up at the 87th meeting. Subsequent to the report by the convener of the contact group, the Executive Committee decided to continue, at its 87th meeting, consideration of the framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing energy efficiency when replacing HFCs with low-global-warming-potential refrigerants in the refrigeration and air-conditioning sector, on the basis of the working document produced by the contact group (decision 86/94).

Discussions at the 87th meeting

8. To facilitate the discussion and in line with decision 86/94, the Secretariat has prepared the present Note which contains:

(a) The working document produced by the contact group on energy efficiency that was reconstituted at the 86th meeting, and reproduced below.

(b) The write-up of the discussion on the matter during the 86th meeting (extracted from the advance version of the Report of the 86th meeting of the Executive Committee[5]), reproduced in Annex I to the present document; and

(c) The document on the matter (UNEP/OzL.Pro/ExCom/86/93) presented at the 86th meeting, and attached to the present document.

Working document

9. The working document produced by the contact group on energy efficiency is presented below:

"The Executive Committee may wish:

(a) [To request the Secretariat to prepare a report for the first meeting of the Executive Committee in 2022 identifying options within the Multilateral Fund as well as working with other financial institutions [including those willing to align with the Multilateral Fund] [whose procedures could be aligned with the Multilateral Fund], [procedures, and the modalities for mobilizing financial resources for maintaining and/or enhancing energy efficiency when replacing HFCs with low-GWP alternatives in the refrigeration, air-conditioning and heat pump (RACHP) sectors] [including consideration of innovative funding models such as incentives and concessional finance, estimate costs and benefits of potential interventions to maintain or enhance energy efficiency through]:

(i) Installation and maintenance;

(ii) Manufacturing sector conversions; and

(iii) Broad energy efficiency policy measures (e.g. minimum energy performance standards, labelling, or consumer incentives).

(b) To request the Secretariat as part of the report referred to sub-paragraph (?) above to identify the relevant procedures and conditionalities for funding from those other financial institutions [including multilateral development banks, climate investment funds, bilateral development banks, the Green Climate Fund and the Global Environment Facility] on energy efficiency to enable co-financing alongside or to align with Multilateral Fund projects [and the possibility of these institutions aligning with the Multilateral Fund, procedures, and the modalities for mobilizing financial resources for maintaining and/or enhancing energy efficiency];

(c) [Recommendations for the consideration of the Executive Committee for channeling these funds through the Multilateral Fund for maintaining and/or enhancing the energy efficiency over and above the funds for phase down of HFCs at the time of approval of the projects in the following RACHP sector:]

[5] UNEP/OzL.Pro/ExCom/86/100

(i) Installation and maintenance;

(ii) Manufacturing sector conversions; and

(iii) Broad energy efficiency policy measures (e.g. minimum energy performance standards, labelling, or consumer incentives).

Australia proposal

[To invite Executive Committee members to submit their views by [14 May 2021] on the following issues in relation to reaching out to other funds and institutions for the purpose of mobilizing resources to support enhancing energy efficiency when phasing down HFCs:

(a) Which institutions should be formally approached?

(b) Which types of activities and projects related to enhancing energy efficiency could be considered for potential funding from sources outside of the Multilateral Fund?

(c) Which types of collaborative arrangements should the Multilateral Fund consider with other institutions?

(d) What key questions does the Executive Committee needs to be answered from these institutions?

(e) Proposed revisions to the information note in Annex II of document UNEP/OzL.Pro/ExCom/86/93 that could be shared with institutions that are consulted.

[To request the Secretariat to compile all submissions received from Executive Committee members in line with sub-paragraph (xx) above] and to continue to discuss the issues of consulting with other funds and financial institutions at the 87th meeting taking into account document UNEP/OzL.Pro/ExCom/86/93.]"

Recommendation

10. The Executive Committee may wish:

(a) To note the framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing energy efficiency when replacing HFCs with low-global-warming-potential refrigerants in the refrigeration and air-conditioning sector (decision 86/94), contained in document UNEP/OzL.Pro/ExCom/87/51;

(b) [To be completed based on the outcomes of the discussion of the matter referred to in sub-paragraph (a) above at the 87th meeting.]

Annex I

EXTRACT FROM DOCUMENT UNEP/OzL.Pro/ExCom/86/100

(ii) Framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing energy efficiency when replacing HFCs with low global-warming potential refrigerants in the refrigeration and air conditioning sector (decision 84/89)

344. At the the formal online 86th meeting, the representative of the Secretariat introduced document UNEP/OzL.Pro/ExCom/86/93.

345. In the ensuing discussion, there was widespread appreciation for the work of the Secretariat in preparing a document on what two members stressed was an issue of great importance. One member noted that, although energy-efficiency matters were not compliance-related, failure to tackle them would contribute to some countries remaining dependent on equipment using high-GWP HFCs; he said that it was crucial to develop performance metrics to measure, monitor and report on the achievement of both project-specific and national energy-efficiency targets. Another member said that actions designed to enhance energy efficiency, such as upgrades to manufacturing lines, should be addressed holistically, and that feasible solutions should be found to provide countries with adequate funding support for the replacement of HFCs. As in the past, an approach whereby the Executive Committee gathered knowledge and experience through the implementation of projects could be considered. One member noted that enhancing energy efficiency was a complicated and expensive process and that the approach should take into consideration both what was feasible and what was desirable.

346. Many members mentioned that the Secretariat should build on the information-gathering efforts undertaken for the document, including by continuing to consult with other financial organizations and by seeking the views of the TEAP and external experts on emerging energy-efficient technologies. Furthermore, they stated that cooperating with other, mostly larger, financial institutions would enable the Multilateral Fund to have a greater impact than it could achieve with its own, relatively modest resources, but that the specific financial institutions to approach would depend on the activities envisaged. While it made sense to approach multilateral financial institutions such as the GEF and the GCF, particularly given the history of positive interaction with the Multilateral Fund, the Secretariat could also approach other potential partners, including multilateral climate funds and multilateral and regional development banks. It would also be helpful to find out from potential partners what activities they would consider for funding and what their requirements were in terms, for example, of project approval mechanisms, performance measurement framework and decision-making timelines. It would also be interesting to know whether the Secretariat had researched the types of arrangements that might be possible with other financial institutions, including, for example, a broad memorandum of understanding. Furthermore, the implementing agencies should be involved in defining the framework for consultations as part of a bottom-up approach, in light of their knowledge of the procedures and operating practices of some of the financial institutions to be approached.

347. Two members asked why, on the basis on its informal consultations with GEF and GCF, the Secretariat had concluded that there were limited opportunities to access funds from those institutions to enhance energy efficiency. In reply, the representative of the Secretariat said that, as GEF funds for climate change mitigation were currently disbursed through its system for transparent allocation of resources, which required funding requests to be part of project proposals submitted by developing countries within a climate change mitigation portfolio, direct collaboration with GEF for accessing funds was complicated. GCF, meanwhile, had not earmarked funds for activities to enhance energy efficiency in cooling applications and accepted proposals only from accredited entities or bodies working with them.

348. Responding to another question, the representative of the Secretariat said that the broad cost estimates in Annex I to document UNEP/OzL.Pro/ExCom/86/93 were based on reports published by international institutions and would have to be refined depending on several factors. One member suggested that the agreed incremental costs model that appeared to have been followed for some of the costs presented in Annex I was perhaps not applicable to activities to enhance energy efficiency, which could be expensive but also offered enormous payback, sometimes within only two or three years.

349. Furthermore, the representative of the Secretariat clarified that, in conducting its research and drafting the document, the Secretariat had drawn on relevant technical information published by TEAP, although TEAP had not been contacted directly; and that more time would be needed to gauge the additional burden on the Secretariat in reviewing projects that included energy-efficiency components if the decision proposed in the document was adopted. Some members expressed their willingness to explore ways of alleviating the potential burden on the Secretariat, for example by providing additional resources that could be used to hire consultants with relevant technical expertise.

350. One member said that, while his delegation welcomed the possibility of the Executive Committee considering additional contributions from non-Article 5 countries for enhancing energy efficiency, it did not support requesting the Secretariat to hold formal consultations with the government funding institutions of those countries, as those Governments were represented on the Committee and could thus convey their interest in providing additional funds to enhance energy efficiency at any time.

351. Two members said that the document presented by the Secretariat had gone beyond the mandate given to it by decision 84/89. One of those members added that the Executive Committee should focus initially on responding to decision XXX/5 of the Parties and decision 84/89, before considering other concerns; in the document, only paragraphs 65 to 69 and the information contained in Annex II could be seen to constitute the basis for a framework for consultations with relevant funds and financial institutions, although several elements were missing. The member, therefore, proposed that Executive Committee members should be invited to submit, by 14 May 2021, their views on which institutions should be formally approached; which types of activity and project related to enhancing energy efficiency could be considered for potential funding from sources outside of the Multilateral Fund; which types of collaborative arrangement the Multilateral Fund should consider with other institutions; and which key questions needed to be answered by these institutions. He said that the information in Annex II of document UNEP/OzL.Pro/ExCom/86/93 could be used for outreach purposes, but that it would benefit from being more succinct, more clearly organized and adapted to reflect the current discussion. He therefore proposed that members also submit comments on that information note.

352. Some members expressed their concern that the approach in the report was top-down and too much centred on the role of the financial institutions. It was stressed that the process of initiation, implementation and coordination of energy efficiency should be developed from the bottom up with national institutions and implementing agencies as key actors in managing and integrating the demands and resources from various donors and funding sources; understanding the perspectives of these actors was key to facilitating the process and implementation.

353. One member, supported by two others, proposed that the Executive Committee request the Secretariat to prepare, for the first meeting in 2022, a report identifying options, both within the Multilateral Fund and through work with other financial institutions, for the inclusion of innovative funding models, such as incentives and concessional finance, along with estimates of the costs and benefits of potential interventions to maintain or enhance energy efficiency through installation and maintenance of equipment, manufacturing sector conversions and broad energy-efficiency policy measures, such as MEPS, labelling or consumer incentives. Another member proposed that the report look at how the relevant procedures and conditionalities for obtaining funding from institutions for energy efficiency could be aligned with Multilateral Fund projects.

354. During the discussions, working text was proposed by other members to provide additional guidance to the Secretariat in preparing a report on options available for the mobilization of additional financial resources for maintaining and/or enhancing energy efficiency when phasing out HFCs in the refrigeration and air-conditioning sector.

355. While two members said that it was challenging to address the complex issues raised by the document in a virtual meeting, there was general agreement that more time was needed to consider the issues and the proposals by members on the working text to be included in a draft decision.

356. Following a discussion, the Executive Committee agreed to reconstitute the contact group on energy efficiency to discuss the matter further and that the contact group would meet again after conclusion of the formal online 86th meeting, but still during the period agreed for the IAPext-86, on 21 April 2021. Any draft decision agreed on by the contact group would be posted on the in-session website of the 86th meeting for consideration by the Committee on a non-objection basis. If any delegation expressed an objection to the draft decision, or if the contact group were unable to reach agreement, consideration of the matter would be deferred to the 87th meeting.

357. Following a discussion in the contact group, the convener informed the Chair that the group had been unable to arrive at a conclusion and proposed that the matter be taken up at the 87th meeting.

358. The Executive Committee decided to continue, at its 87th meeting, consideration of the framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing energy efficiency when replacing HFCs with low-global-warming-potential refrigerants in the refrigeration and air-conditioning sector, on the basis of the working document produced by the contact group formed at the formal online 86th meeting, as contained in Annex XLVIII, to the present report.

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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 2021[1]

FRAMEWORK FOR CONSULTATIONS WITH RELEVANT FUNDS AND FINANCIAL INSTITUTIONS TO EXPLORE THE MOBILIZATION OF ADDITIONAL FINANCIAL RESOURCES FOR MAINTAINING OR ENHANCING ENERGY EFFICIENCY WHEN REPLACING HFCs WITH LOW-GLOBAL-WARMING-POTENTIAL REFRIGERANTS IN THE REFRIGERATION AND AIR-CONDITIONING SECTOR (DECISION 84/89)

Background

1. At their Twenty-Eighth Meeting,[2] the Parties adopted the Amendment to the Montreal Protocol known as the Kigali Amendment (decision XXVIII/1) and adopted decision XXVIII/22 related to the amendment phasing down HFCs. In paragraph 22 of that decision, the Parties requested the Executive Committee to develop cost guidance associated with maintaining and/or enhancing the energy efficiency (EE) of low-global-warming-potential (GWP) or zero-GWP replacement technologies and equipment when phasing down hydrofluorocarbons (HFCs), while taking note of the role of other institutions addressing energy efficiency, when appropriate.

2. In response to decision 82/83(d), the Secretariat submitted to the 83rd meeting,[3] document UNEP/OzL.Pro/ExCom/83/41, Paper on information on relevant funds and financial institutions mobilizing resources for energy efficiency that may be utilized when phasing down HFCs. During the discussions, members noted that the document was a good basis for further exploration of potential sources of external resources for improving EE that could be leveraged to enhance the future work of the Multilateral Fund when phasing down HFCs. However, members noted that the following issues should be considered when providing guidance to the Secretariat on approaching relevant funding mechanisms and institutions mobilizing resources for improving EE:

(a) It was important to first resolve the issue of whether the Multilateral Fund could accept external funding. It would be time consuming to request the Secretariat to obtain further

[1] Due to coronavirus disease (COVID-19).
[2] Kigali, 10–15 October 2016.
[3] Montreal, 27–31 May 2019.

information from relevant funding mechanisms and institutions if the Committee were ultimately to decide that external funds could not be accepted. The Committee also needs to agree on the types of projects and activities for which funds from other institutions might be mobilized. Further, such funds could be used to complement funding provided by the Multilateral Fund for projects in the manufacturing sector to support technology upgrades to improve the EE of equipment and to support enabling activities to promote EE;

(b) There were many sources for financing the costs linked to EE that could be leveraged to support the work of the Multilateral Fund, which finances the incremental costs involved in the transition away from HFCs;

(c) It was relevant to keep in mind the linkages between the Paris Accord and the Kigali Amendment, with climate change adaptation and mitigation efforts featuring more prominently in the policies of some Article 5 countries;

(d) It was premature to state that the Multilateral Fund should engage with all types of funding mechanisms and institutions. It might be a good idea to start by approaching the implementing agencies of the Fund that had funds available for EE, and include the bilateral agencies among the potential sources for external funding;

(e) It was important that any cooperation should fit the existing modalities and procedures of the Multilateral Fund, without being prescriptive. Arrangements for cooperation with other funding mechanisms could take the shape of memoranda of understanding, or of co-funding modalities with implementing agencies. Finalizing the cost guidelines for HFC phase-down would be essential for establishing eligible and non-eligible costs;

(f) The criteria for access to the funds should apply to all Article 5 countries without exclusion. Some members said that countries could perhaps access funds from other funding mechanisms and institutions through a set procedure involving templates designed by the Multilateral Fund. Other members suggested channelling all external funds through the Multilateral Fund, which would then distribute those funds through its customary procedure, given that the Multilateral Fund was known for its efficient management of projects and funding, that Article 5 countries were familiar with the modalities of the Fund, and that countries trusted the Fund to fulfil its obligations without fail;

(g) There was some discussion on the usefulness, for instance, of having more detailed information on: the strategies of funding mechanisms and institutions; the way they dealt with funding requests from countries; their operating structure (such as accredited agencies and national focal points in the case of the Global Environment Facility (GEF)); and the way that the implementing agencies of the Fund could help facilitate countries' requests for co-financing from other funding mechanisms and institutions; and

(h) Some members suggested providing the Secretariat with a brief "consultation" document for ensuring effective communication between the Secretariat and the secretariats of other bodies in that context. The document, which should be approved by all members of the Executive Committee, could provide background information on the Multilateral Fund and on the phase-down of HFCs in Article 5 countries; highlight the opportunity to achieve significant additional climate benefits; convey the interest on the part of the Multilateral Fund in collaborating with other funding mechanisms and institutions; outline the projects and activities that could be carried out collaboratively; describe funding procedures and modalities; and provide examples of collaborative initiatives.

3. The Executive Committee agreed to task the contact group on energy efficiency with consideration of the issues raised; however, owing to time constraints, the contact group was unable to address the issues. Subsequently, the Executive Committee deferred to the 84th meeting consideration of the issues raised by the document (decision 83/63).

4. In line with decision 83/63, the Secretariat resubmitted the paper on information on relevant funds and financial institutions mobilizing resources for EE that may be utilized when phasing down HFCs as document UNEP/OzL.Pro/ExCom/84/68. During discussion of this item, the Committee agreed to refer it to the contact group on energy efficiency. Following a discussion in the contact group, the Executive Committee *inter alia* requested the Secretariat:

(b)(i) To prepare, in consultation with implementing agencies, a document for the 85th meeting that could provide a framework for consultations with relevant funds and financial institutions to explore, at both the governing and operational levels, the mobilization of financial resources, additional to those provided by the Multilateral Fund, for maintaining or enhancing energy efficiency when replacing HFCs with low global-warming-potential refrigerants in the refrigeration and air-conditioning sector; and

(b)(ii) To continue the informal exchange of information with relevant funds and financial institutions, including for the preparation of the document referred to in sub-paragraph (b)(i) above (decision 84/89(b)(i) and(ii)).

Impact of the COVID-19 pandemic

5. The Executive Committee decided to discuss the document requested under decision 84/89(b)(i) at its 85th meeting. However, 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;[4] 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, leading to a 15-month period between the 84th and 86th meetings.

Submission to the 86th meeting

6. In line with decision 84/89(b), the Secretariat has submitted the present document to the 86th meeting.

Scope of the document

7. For the preparation of the present document, the Secretariat reviewed and extracted the information from the Technology and Assessment Panel (TEAP) task force report on EE[5] that would be relevant to the

[4] The intersessional approval process commenced on 4 May 2020 and concluded on 8 June 2020; through this process the Committee considered 42 meeting documents, namely, the Reports on projects with specific reporting requirements, the Overview of issues identified during project review; project proposals submitted under bilateral cooperation and under the 2020 work programmes of UNDP, UNEP and UNIDO; and project proposals in 35 Article 5 countries and the 12 Pacific Island Countries (the report on the process is contained in document UNEP/OzL.Pro/ExCom/85/IAP/3).

[5] The document presents the actions that have been taken in response to decision XXIX/10, particularly regarding the report by the TEAP on issues related to EE, and the workshop on EE opportunities while phasing down HFCs, held in the margins of the 40th meeting of the OEWG. It further presents the discussions at the meeting of the OEWG in

discussion by the Executive Committee. In addition, the Secretariat updated or expanded the extracted information from the TEAP task force report as required, based on publicly available information.

8. As the impact of the refrigerant choice on the EE of the refrigeration and air-conditioning (RAC) equipment is usually relatively small (i.e., ranging from +/- 5 to 10 per cent), for the purposes of this document, it is considered that activities for EE will be aimed at enhancing (and not only maintaining) the performance of the RAC equipment beyond the effect of the refrigerant change.[6]

9. The present document consists of the following sections:

I Policy and management considerations

II Informal consultations with the Green Climate Fund (GCF) and the GEF

III Essential elements of a draft framework for consultations with relevant funds and financial institutions to explore, at both the governing and operational levels, opportunities for mobilization of financial resources

The document also contains the following annexes:

I Estimated cost for enhancing EE of RAC equipment when phasing down HFCs

II Information note on Multilateral Fund and EE aspects in relation to RAC equipment under the Kigali Amendment

10. In line with decision 84/89(b)(i), during the preparation of the document, the Secretariat consulted the implementing agencies and explained that due to the constraints imposed by the pandemic, the Executive Committee had decided to defer consideration of all policy documents to the postponed 86th meeting, which was proposed to be held in-person in March 2021. The Secretariat prepared a background note containing key points that would be included in the present document, and requested the views of the implementing agencies.[7] The Secretariat expresses its appreciation to the implementing agencies for submitting their comments, which were duly considered when finalizing the document. In their responses, the implementing agencies expressed the need for addressing EE and HFC phase-down together to maximise the climate benefits while phasing down HFCs, and noted that the Multilateral Fund is the best suited institution to address EE and HFC phase-down in an integrated manner given the nature of the activities and extensive experience in phasing out controlled substances in the RAC sector.

11. In line with decision 84/89(b)(ii), the Secretariat held informal consultations with the GEF and GCF on the mobilization of financial resources additional to those provided by the Multilateral Fund, for maintaining or enhancing EE when replacing HFCs with low-GWP refrigerants in the RAC sector.[8] The Secretariat expresses its appreciation to the staff of the GEF and GCF for the extensive informal consultations held on this matter.

relation to the report by the TEAP and the workshop, and transcribes the general discussion in the OEWG on the issue of EE while phasing down HFCs.

[6] UNEP/OzL.Pro/ExCom/83/42

[7] Under "normal" circumstances, the Secretariat would have had substantive discussions during the Inter-agency coordination meeting, which has not been convened due to the pandemic restrictions.

[8] Consultation by the Secretariat with these two institutions (as well as with several others), are summarized in the document on the Secretariat activities submitted at each meeting of the Executive Committee.

I. POLICY AND MANAGEMENT CONSIDERATIONS

12. In preparing the document, the Secretariat identified policy and management issues related to: the eligibility of funding for activities to enhance EE; alignment of the policies of funds and financial institutions with the policies of the Multilateral Fund; maintaining the sustainability and accountability of the Multilateral Fund funding allocations for enhancing EE; the duration of the assistance for enhancing EE; managing of additional voluntary contributions by the Multilateral Fund, and workload of the Multilateral Fund institutions. While a few of these issues were described in previous documents considered by the Parties and/or the Executive Committee, or raised by the Committee during its discussion of document UNEP/OzL.Pro/ExCom/83/41 (as summarized in the Background section above), other issues had not been discussed.

13. Therefore, the Executive Committee may wish to consider these policy and management issues, as described below, when considering the present document and may also wish to give guidance to the Secretariat prior to contacting relevant funds and financial institutions for the mobilization of financial resources, in addition to those provided by the Multilateral Fund, for enhancing EE when converting HFC-based RAC equipment to alternative technologies.

Eligibility of funding for activities to enhance the EE of RAC equipment while phasing down HFCs

14. The Multilateral Fund was established for the purpose of providing technical and financial assistance to allow Article 5 countries to fulfill their compliance obligations under the Montreal Protocol. The funding levels of the Fund are established on a triennium basis, following an assessment of the compliance needs of Article 5 countries in relation to imminent compliance targets by a Task Force on the replenishment of the Fund, constituted by the TEAP.

15. Decision XXVIII/1 on the Kigali Amendment set out the compliance obligations of the Parties in relation to the phase-down of HFCs, according to a staged reduction in consumption and production. On this basis, compliance by the Parties will be determined against the reported levels of consumption and production of the newly controlled substances, i.e., HFCs (as well as based on other compliance obligations e.g., licensing systems, annual data reporting on controlled substances). Through the Kigali Amendment, non-Article 5 Parties committed to provide the funding required to enable Article 5 Parties that have been receiving assistance from the Fund, to achieve the control targets agreed by the Parties.

16. As the Kigali Amendment entered into force in 1 January 2019, future assessments of the funding requirements of the Multilateral Fund will have to consider the newly acquired compliance obligations for the phase-down of HFCs in Article 5 countries. Although the Parties requested the Executive Committee to develop cost guidance associated with maintaining and/or enhancing EE when converting HFC-based RAC equipment to alternative low-GWP technologies, matters on EE are not compliance related and do not have specific compliance targets, or agreed performance metrics for measuring, monitoring and reporting achievement of EE targets and, therefore, cannot be funded through the Multilateral Fund unless there is a specific decision by the Parties and/or the Executive Committee. Absent a decision from the Executive Committee, funding for EE-related activities should be provided from sources outside the Multilateral Fund.

17. In the past, the Parties to the Montreal Protocol have decided to provide funding to Article 5 countries to address specific matters not related to their compliance obligations. For example, decision VIII/4 on the 1997–1999 replenishment of the Multilateral Fund, agreed that the budget figure US $540,000,000 included US $10 million to enable Article 5 Parties to apply the measures contained in paragraph 2 of decision VII/8,[9] and to assist those Parties to start the implementation of any

[9] That, in considering the viability of possible substitutes and alternatives to methyl bromide, the TEAP shall examine and be guided by the extent to which technologies and chemicals identified as alternatives and/or substitutes have

recommendations that might arise from the Ninth Meeting of the Parties on this matter (i.e., methyl bromide control measure in line with the Copenhagen Amendment). Subsequently, through decision IX/5, noting that the funding for the 1997–1999 triennium was limited to the amounts agreed in decision VIII/4, the Parties gave immediate priority to the use of Fund resources for the purpose of identifying, evaluating, adapting and demonstrating methyl bromide alternatives and substitutes in Article 5 Parties, and decided that 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. Further, through decision 77/60(d), the Executive Committee has accepted funding from a number of non-Article 5 countries for assisting parties to provide fast-start support for implementation of the Kigali Amendment.[10]

18. Similarly, the Executive Committee may wish to consider providing funding for enhancing EE when converting HFC-based RAC equipment to alternative technologies.

Alignment of the policies of funds and financial institutions with the policies of the Multilateral Fund

19. The key findings of the TEAP Decision XXIX/10 task force report on issues related to EE while phasing down HFCs included *inter alia* the need to address the barriers in coordinating with existing financial organizations (e.g. GEF, GCF, Climate Investment Fund (CIF)), with a view to having strategic focal areas introduced with earmarked financial windows/flows, and within a streamlined timeframe to meet the Montreal Protocol compliance targets and the EE objectives when phasing down HFCs. This indicates a need to develop appropriate liaison/coordination mechanisms with the funding institutions in order to examine the potential for increasing the funding levels and improving the streamlining of processes that either currently do not exist or for which there are only low levels of funding being made available enhance the EE of the RAC sector. There is also a need to evaluate funding structures that could build on and complement the current Multilateral Fund and, if deemed appropriate, to establish rules, regulations, and governance structures for any such new funding infrastructure.

20. The lack of alignment of the policies of financial institutions with the policies of the Multilateral Fund had been identified as a potential challenge in projects funded under the Fund where additional funding resources from external sources were required. A few examples are described below.

21. At the 45th meeting,[11] the Secretariat was requested to prepare a study on criteria and modalities for chiller projects that would demonstrate the feasibility of and modalities for replacing centrifugal chillers through the use of resources external to the Fund (decision 45/4(d)). In line with decision 45/4(d), at its 47th meeting,[12] the Executive Committee approved seven chiller demonstration projects, comprising individual country projects, regional projects, and a global project, proposing various sources of co-financing, namely, the GEF, Carbon Financing, the Canadian International Development Agency (CIDA), the French GEF, implementing agency funding and counterpart funding. A review of the progress reports on the chillers projects highlighted the following observations:

(a) Speed in implementation was highest in the case of counterpart funding and grants. Innovative funding,[13] including GEF support, has taken significantly more time. The project cycle timeframe varied from three-to-four years to six-to-eight years depending on

been tested under full laboratory and field conditions, including field tests in Article 5 countries, and have been fully assessed, *inter alia*, as to their efficacy, ease of application, relevance to climatic conditions, soils and cropping patterns, commercial availability, economic viability and efficacy with respect to specific target pests.

[10] These funds were approved for implementing enabling activities in many Article 5 countries during the years 2017 to 2019.

[11] Montreal, 4–8 April 2005.

[12] Montreal, 21-25 November 2005.

[13] In the context of document, innovative funding refers to combining funding from different financial mechanisms.

the source of co-financing;

(b) Because of short processing times and relatively quick on-the-ground results, the counterpart funding and the Overseas Development Assistance (ODA) grant co-financing options lend themselves more easily to situations where early results were needed. Innovative funding arrangements took considerably longer to secure co-financing; and

(c) Funds available from other mechanisms, if not directly managed by the Multilateral Fund, could be subject to specific procedures and policies taken by the governing bodies of those funds and might not be aligned with the Multilateral Fund policies and project cycle. Furthermore, the governing bodies could change policies and procedures at different points in time, which might affect the project implementation cycle. Experience with the chiller projects shows such instances significantly delaying project implementation.

22. At the 62nd meeting,[14] UNDP, UNEP, UNIDO and the World Bank submitted stand-alone projects for resource mobilization for climate co-benefits beyond those that could be secured through HCFC phase-out alone, which were subsequently approved at the 63rd meeting.[15] A review of the progress reports[16] on two of these projects highlighted the following observations:

(a) The proposal for the preparation of four pilot demonstration projects in the RAC manufacturing sector to examine technical intervention to improve EE, national policy and regulatory measures to sustain such intervention in order to maximize the climate impact of HCFC phase-out, to be funded as resource mobilization activities submitted by UNDP, noted that it is important to increase the understanding on the part of the decision-making bodies of the Multilateral Fund, the GEF and other potential partners regarding the common objectives of the projects and their expected results (i.e., HCFC phase-out and additional EE gains) to encourage faster approval. The main challenge in encouraging and promoting synergies among different funding mechanisms related to simplifying complex arrangements to ensure that funding was made available on time for the country/company to make the necessary technology changes and achieve compliance without unnecessary delays; and

(b) The proposal for a study focusing solely on monetizing carbon credits, to be funded as a resource mobilization activity submitted by the World Bank, noted that there were a number of sources of financing that address the EE gains of HCFC phase-out, but challenges emerged with respect to timing, approach, and implementation; in addition, bringing together multi-source financing increased the transaction costs associated with these activities. As part of the study, the World Bank provided a review of its experiences with the multi-sector financing approach used in the chiller projects and noted that the principal barrier was the high opportunity cost of access to up-front financing for the investment; project boundaries must be clearly defined against goals and objectives at the time of project design to generate maximum project impact; the policies and objectives of funding institutions need to be harmonized to avoid issues related to opposing views with respect to commercial availability, cost-effectiveness and suitability, including safety considerations linked to alternatives.

[14] Montreal, 29 November–3 December 2010.
[15] Montreal, 4–8 April 2011.
[16] UNEP/OzL.Pro/ExCom/83/41

23. The Secretariat considers that synchronisation of management processes from other funds and financial institutions is critical for ensuring project performance effectiveness including the timely conversion of the projects within the funding levels approved.

Maintaining the sustainability and accountability of the Multilateral Fund

24. The Parties to the Montreal Protocol have entrusted the management of the Multilateral Fund to the Executive Committee since the Fund's inception. From the beginning, the Executive Committee has established a robust framework, based on policies, guidelines and procedures that have ensured the Multilateral Fund's sustainability and accountability. Overall planning for projects is done through the three-year rolling business plan, which includes project activities submitted by the bilateral and implementing agencies on behalf of Article 5 countries for the main purpose of achieving their national compliance targets.

25. Activities included in the work programmes and project proposals are submitted by the agencies based on their business plans. The Secretariat undertakes a thorough review of the documents submitted, based on Executive Committee's policies, guidelines and decisions, and presents an analysis of the findings to the Executive Committee for its consideration for approval. Upon approval, the funds are immediately released by the Treasurer to the implementing agencies, or recorded as a contribution to the Fund for projects funded as bilateral cooperation.

26. Funds transferred to the agencies for project implementation are continuously monitored until the projects are completed. The funds received, disbursed and returned are scrutinized, accounted for and reported to the Executive Committee. In addition, any interest earned by the agencies and any unspent balances on projects are returned to the Multilateral Fund for reprogramming. To ensure timely returns, these are monitored by the Secretariat and reported to each meeting.

27. Project progress is monitored closely through specific project reports, such as the annual project progress reports, which also include reconciliation of accounts. Upon completion of the projects, the bilateral and implementing agencies submit project completion reports providing a complete overview of project implementation achievements against plans and learning from project implementation, for consideration by the Executive Committee. Thematic evaluations of projects are undertaken by the independent monitoring and evaluation officer and the reports are presented to the Executive Committee. These reports are used by the Secretariat and the bilateral and implementing agencies for future project assessments and evaluations.

28. These institutionalized processes of business planning, project monitoring and reporting, and financial accountability are elements that have made the Multilateral Fund a successful funding mechanism. In light of this, funding for enhancing EE when phasing down HFCs should be governed, to the extent possible, by the policies, guidelines and procedures that have ensured the sustainability and accountability of the Multilateral Fund, taking into consideration relevant policies, guidelines and procedures of the funds and financial institutions.

Funding allocations for enhancing EE

29. One of the basic principles of the Multilateral Fund is that funding can only be disbursed up to the level of funding available in the Fund. As the sectoral and national phase-out plans that have been submitted by Article 5 countries have been based on multi-year performance-based funding tranches, the Executive Committee has been able to approved them only "in principle", as the total aggregated funding for all the sector/national plans was not available in the Multilateral Fund at the time of their approval.

30. In considering the funding requirements of the Multilateral Fund during any given triennium of the replenishment of the Fund, the TEAP Task Force includes the funding approved "in principle" as part of

the ("priority") financial requirements for Article 5 countries. This policy has ensured that funding has always been available at the time required to cover the funding tranches of the plans approved "in principle".

31. Similarly, all the funding requirements for matters related to EE must be available at the same time the funding for the conversion of the RAC manufacturing enterprises is approved under the Multilateral Fund. In the absence of this funding up-front, the phase-down of HFCs associated with the conversion of the enterprise would be delayed, resulting in a potentially higher cost of the conversions (e.g., because of the longer downtime of the enterprise), and could put the country concerned at risk of non-compliance with its obligations under the Protocol.

32. To have a better understanding of the overall funding requirements for enhancing the EE of HFC-based RAC equipment in Article 5 countries, the Secretariat did an assessment based on, information currently available in technical sources,[17] obtained through technical experts on the manufacturing of RAC equipment, and reported under the completed project for the conversion from HFC-134a to isobutane as refrigerant in manufacturing household refrigerator and of reciprocating compressor of HFC-134a to energy-efficient compressor (isobutane) in Walton Hi-Tech Industries Limited (approved at the 80th meeting under decision 78/3(g)).[18] Based on this information, the cost of enhancing the EE of the 263.3 million RAC equipment manufactured worldwide[19] could range between US $7.0 and US $9.0 billion, of which between US $4.9 and US $6.3 billion would be associated with RAC equipment manufactured in Article 5 countries. The reduction in emissions associated with enhanced EE of the RAC equipment amounts to approximately 600 million CO2 eq. tonnes, which will result in a cost of achieving CO_2 emissions reduction of US $11.7 to US $15.1 per CO_2 eq. tonne. Annex I to the present document presents the analysis of the incremental cost of enhancing the EE of RAC equipment.

33. Considering the experience of the conversion of CFC-based and HCFC-based manufacturing enterprises, it could be expected that the existing HFC-based RAC manufacturing enterprises would be converted over the next 15 to 20 years. If with the conversion of the RAC equipment to non-HFC the EE of the equipment will be enhanced, then the estimated US $4.9 to US $6.3 billion would be required in the next 15 to 20 years. In this regard, it is necessary to determine whether funding requirements for matters related to EE would be available until all the eligible HFC-based RAC manufacturing enterprises are converted.

Duration of the assistance for enhancing EE

34. Alternatively, consideration could be given to establishing a funding window with a predetermined funding level and a predetermined duration. Similar windows have been considered under the Multilateral Fund, including:

(a) A window amounting to US $10.0 million to facilitate pilot conversions of significant groups of small firms, in line with decision 25/56;

(b) A window amounting to US $15.2 million for the chiller sector in 2005, established in line with decision XVI/13;

(c) A window amounting to US $10.0 million for demonstration projects for low-GWP

[17] The following sources were consulted: document UNEP/OzL.Pro/ExCom/83/42; TEAP Decision XXIX/10 task force report on issues related to EE; Cooling Imperative report prepared by Economist Intelligence Unit, 2019; and the report by the Japan Refrigeration and Air Conditioning Industry Association (JRAIA) of 2017.

[18] At the time of preparing the present document, this was the only project under decision 78/3(g) that has been completed and provided detailed data on the incremental capital costs and incremental operating costs.

[19] RAC equipment consists of: 127.4 million domestic refrigerators; 15.0 million commercial refrigerators; and 120.8 million air-conditioners.

alternatives established by decision 72/40; and

(d) A window amounting to US $11.53 million for pilot projects for the destruction of unwanted ODS, noting that destruction of unwanted/used controlled substances was not required for compliance.

35. The Executive Committee may wish to consider the capacity of the Multilateral Fund to manage financial resources from additional contributions outside the Fund, in case the Committee wishes to establish a funding window for enhancing EE in RAC equipment while phasing down HFCs, with financial resources outside the Multilateral Fund.

Managing of additional voluntary contributions by the Multilateral Fund

36. At its 77th meeting,[20] the Executive Committee considered a note by the Secretariat,[21] which included *inter alia* information on the intent of 17 non-Article 5 Parties[22] to provide US $27 million in 2017 to assist Article 5 countries through fast-start support for implementation of an ambitious HFC amendment with a sufficiently early freeze date that was adopted in 2016. During the discussions, it was noted that the modalities related to the contributions could be decided through bilateral discussions between the donor countries and the Treasurer, given variations in the financing mechanisms applied by different countries, which would necessitate a customized approach.

37. Following discussions in a contact group, the Executive Committee accepted, with appreciation, the additional contributions, noting that such funding was one-time in nature and would not displace donor contributions; such contributions should be made available for Article 5 countries that had an HFC consumption baseline year between 2020 and 2022 and that 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. The Executive Committee also requested the Secretariat to develop a document describing possible procedures for countries in accessing the additional contributions, and requested the Treasurer to communicate with contributing non-Article 5 countries on procedures for making the additional contributions available to the Fund (decision 77/59(d)).

38. Since accepting the additional contributions by the group of non-Article 5 countries, the Executive Committee has considered at each meeting a report by the Treasurer on the status of additional contributions to the Multilateral Fund.[23] At the 78th meeting,[24] the Treasurer informed the Executive Committee that, in consultation with the Secretariat, it had developed two modalities for receiving the additional contribution from each Government, either through an agreement between each Government and UNEP as the Treasurer, or through a letter of intent from the Government to UNEP.

39. As of the end of the 82nd meeting,[25] the Treasurer had received US $25,513,071, representing the total additional voluntary contributions from the group of 17 non-Article 5 countries. Of this amount, the Executive Committee has disbursed US $25,403,180 for enabling activities in 116 Article 5 countries, for the preparation of HFC phase-out projects in eight Article 5 countries, and for investment projects in five

[20] Montreal, 28 November - 2 December 2016.
[21] UNEP/OzL.Pro/ExCom/77/70/Rev.1
[22] The 17 non-Article 5 countries are: Australia, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland, and the United States of America.
[23] UNEP/OzL.Pro/ExCom/78/3 and Corr.1; UNEP/OzL.Pro/ExCom/79/44 and Corr.1; UNEP/OzL.Pro/ExCom/80/53; UNEP/OzL.Pro/ExCom/81/5; UNEP/OzL.Pro/ExCom/82/5. The report for the 83rd meeting is contained in document UNEP/OzL.Pro/ExCom/83/5
[24] Montreal, 4-7 April 2017.
[25] Montreal, 3-7 December 2018.

Article 5 countries. The activities funded under the additional voluntary contributions were governed by the policies, guidelines and procedures of the Multilateral Fund.

40. Given that the Executive Committee, in accepting the additional contributions announced by a number of non-Article 5 Parties, noted that such funding was one-time in nature and would not displace donor contributions, the Treasurer kept such contributions separate from the pledged contributions from non-Article 5 countries. Similarly, annual progress reports and business plans submitted by bilateral and implementing agencies separated the projects and activities funded from the voluntary contributions, from the approved projects and activities funded from pledged contributions.

41. The excellent experience in handling the additional voluntary contributions has demonstrated the strong working relationship of the Executive Committee with funding institutions of Governments from non-Article 5 countries. Prior knowledge on the operating procedures of the Executive Committee (including project implementation monitoring and reporting) by the non-Article 5 countries that provided additional contributions to the Multilateral Fund, proved to be effective in utilizing such contributions cost-effectively and in a timely manner.

42. Based on the experience gained, the Executive Committee may wish to consider whether to approach funding institutions of Governments from non-Article 5 countries for mobilising additional financial resources for enhancing EE while phasing down HFCs in the RAC sector.

Workload of the Multilateral Fund institutions

43. At its 81st meeting,[26] the Executive Committee discussed document UNEP/OzL.Pro/ExCom/81/55 on implications for Multilateral Fund institutions in terms of expected workload in the coming years, including in relation to the Kigali Amendment for the phase-down of HFCs.[27] The document indicated *inter alia* that while the Multilateral Fund institutions have shown initiative in strengthening their core teams and engaging in-house expertise, uncertainty on important policy matters is presently a significant challenge to better define the expected workload and its implications, particularly as forthcoming decisions of the Executive Committee will determine policies related to the HFC phase-down. One of the uncertainties relates to policies on EE matters.

44. For mobilising of financial resources in addition to those provided by the Multilateral Fund for maintaining and/or enhancing EE while replacing HFCs with low-GWP alternatives, there would be a need for the Executive Committee to have consultations and negotiations with equivalent committee/board of the relevant funds and financial institutions. Further, the workload of the Secretariat and the Treasurer would be affected and could increase significantly depending on the number of funds and financial institutions providing funding for projects for enhancing EE.

45. In addition to several other requirements including regular reporting, specific procedures and agreements for making the additional contributions available to the Multilateral Fund, there is a need to prepare and discuss with the Treasurer of each of the fund and financial institution *inter alia* specific agreement conditions, fund flow process and monitoring and reporting requirements. For example, in the case of the additional contributions by 17 non-Article 5 countries to provide fast-start support for implementation of the Kigali Amendment, the Treasurer communicated with each country on procedures and modalities for making the additional contributions available to the Multilateral Fund.[28]

46. While having discussions with relevant funds and financial institutions, the processes and costs associated with dealing with multiple institutions for managing the additional funding for enhancing EE,

[26] Montreal, 18–22 June 2018.
[27] UNEP/OzL.Pro/ExCom/81/55
[28] UNEP/OzL.Pro/ExCom/78/3

has to be assessed. Depending on the number of funds and financial institutions that would be providing additional funding, the administrative costs (including human resources) of the Secretariat and the Treasurer for working with all of them could be extensive. In this regard, the Secretariat considers that details of administrative and reporting modalities for potentially working with several different funds and financial institutions, and for managing the additional financial resources, needs to be considered by the Executive Committee.

47. The workload of the Multilateral Fund institutions (including bilateral and implementing agencies, the Treasurer and the Secretariat) will be determined by mandated multiyear activities, the capacity and readiness of Article 5 countries to handle HCFC phase-out and HFC phase-down activities simultaneously, and the scheduling of those activities over the next decade. At this stage, it is uncertain whether the implementation of HCFC phase-out and HFC phase-down will be parallel or integrated.[29] Additional work will be required in the event that, in addition to replacing the HFC-based RAC equipment to alternative technologies, the EE of such equipment is enhanced. The size of the additional resource, would be determined by the policies followed for funding EE aspects under the Multilateral Fund or other relevant funds and financial institutions.

II. INFORMAL CONSULTATIONS WITH GEF AND GCF

48. In reviewing the list of funding, financial and other institutions included in the TEAP decision XXIX/10 task force report on issues related to EE while phasing down HFCs, the Secretariat noted that the Multilateral Fund, the GEF and the GCF are the three global institutions that have been established to address global environmental issues:

(a) The Multilateral Fund is the financial mechanism of the Montreal Protocol for the Protection of the Ozone Layer;

(b) The GEF is the financial mechanism for the following international environmental conventions: United Nations Convention on Biological Diversity (UNCBD); Stockholm Convention on Persistent Organic Pollutants (POPs); United Nations Convention to Combat Desertification (UNCCD); the United Nations Framework Convention on Climate Change (UNFCCC), and the Minamata Convention on Mercury; and

(c) The GCF is the operating entity of the financial mechanism of the UNFCCC.

49. The Secretariat held informal consultations with the GEF and GCF on the mobilization of financial resources additional to those provided by the Multilateral Fund, for maintaining or enhancing EE when replacing HFCs with low-GWP refrigerants in the RAC sector, as summarized below.

Informal consultations with the GEF

50. The GEF concluded its seventh replenishment in June 2018 at a total pledged funding of US $4.1 billion, of which US $802 million has been set aside for the Climate Change Mitigation (CCM) area for the sustainable mitigation of the concentration of greenhouse gases (GHG) in the atmosphere. Specifically, it includes: mitigated GHG emissions; increased use of renewable energy and decreased use of fossil energy resources; improved EE; increased adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration; and conservation and enhanced carbon stocks in agriculture, forest, and other land use.

51. The GEF informed the Secretariat that the CCM area has a total funding of US $143 million allocated for accelerating the adoption of EE measures in different sectors, and equipment and appliances,

[29] UNEP/OzL.Pro/ExCom/81/55

by promoting best practices; fostering harmonization of testing and performance standards, and providing technical assistance to countries; and fostering technology deployment, dissemination, and transfer with a special emphasis on small and medium size enterprises, and private sector partnerships; these activities are proposed to be undertaken under funding windows for accelerating EE adoption (US $101 million) and Cleantech innovation (US $42 million). Since CCM falls within the System for Transparent Allocation of Resources (STAR allocation)[30] process, any funding required for enhancing EE-related activities in the RAC sector need to be part of the projects submitted by the Article 5 country concerned under the CCM portfolio.

52. Under the current GEF-7 replenishment, the Food Systems, Land Use, and Restoration Impact Program[31] and the Sustainable Cities Impact Program[32] could include components that can address EE when replacing HFCs with low-GWP refrigerants in the RAC sector. These programmes can draw funds from the different available focal areas within GEF-7 allocation. In addition to the impact programmes, an additional US $136 million is available as non-grant instruments for funding projects with environment benefits; these funds are in the form of loans, concessional financing and equity, are not part of the STAR allocation process, and are approved based on the merits of the individual applications.

53. The implementing agencies of the Multilateral Fund are accredited under the GEF and can submit projects relating to EE activities in the RAC sector. To date, there is no specific institutional arrangement between GEF and the Multilateral Fund for funding EE activities when replacing HFCs with low-GWP refrigerants in the RAC sector.

Informal consultations with the GCF

54. The GCF is a global fund that supports the efforts of developing countries, particularly the Least Developed Countries, Small Island Developing States, African States and nations that are particularly vulnerable, to respond to the challenge of climate change. The developing countries have a direct access modality so that national and sub-national organizations can receive funding directly beyond that of the multilateral institutions.

55. The GCF implements projects through partnerships with Accredited Entities (AEs), which submit a project proposal, in close consultation with national focal points, for consideration by the GCF Board; the four implementing agencies of the Multilateral Fund are AEs. Every project the GCF Board agrees to fund must be endorsed, via a no-objection letter, by the national focal point. AEs can also respond to Requests for Proposals (RFPs) issued by the GCF to fill current gaps and needs in climate financing. In issuing some RFPs, the GCF may accept proposals from entities which have not yet been accredited, but in such a case, the non-accredited entities must team up with AEs when formally submitting funding proposals to the GCF. In addition, the GCF has established a Simplified Approval Process for some small-scale projects (Concept notes) that may also be submitted for consideration. Those projects may be presented as long as the project size is up to US $10 million[33] of the total project budget, the environmental and social risks and impacts are minimal and the small-scale project is ready for scaling up to low-emission and climate-resilient

[30] The GEF Secretariat allocates resources in an indicative way to its eligible countries in a replenishment period; based on strategic priorities identified in the GEF replenishment for the specific focal areas and national priorities, the funds allocated under the STAR framework are utilized by individual countries. In the seventh replenishment period of the GEF, the STAR covered three focal areas: biodiversity, climate change, and land degradation

[31] This program aims to address the underlying drivers of unsustainable food systems and land-use change by helping countries take a more holistic and system-wide approach that is in line with their specific needs for generating global environmental benefits.

[32] This program supports sustainable and integrated urban planning by enhancing policy and financing environments to promote innovations for improved urban infrastructure, and to revamp how cities operate at all levels and for all stakeholders.

[33] GCF contribution level.

development. Funding proposals are submitted to the GCF Secretariat for the review process, before consideration of their approval by the GCF Board.

56. The document on Strategic Programming for the Green Climate Fund First Replenishment ("GCF strategic programming document"), mentions that one of the focus areas for GCF should be to support the development of environmentally sustainable technologies, technology transfer and collaborative research and development.[34] Two of the areas where the GCF sees an opportunity to contribute are working with other climate funds to scale and replicate successful investments and accelerate uptake of green investment by mainstream investors, keeping in view the GCF's core value proposition of supporting country-driven transformation through catalytic investment. Further, in the GCF strategic programming document, promoting minimum energy performance in heat pumps and heating and cooling appliances as well as insulation are identified as interventions for creating an enabling environment for a paradigm shift in EE.[35]

57. During the informal consultations, the GCF reported that activities relating to EE in cooling were included in their 2020–2030 strategic plan. The funding level for EE in cooling has not been set to a specific amount, and funding would include grant and non-grant instruments. In addition, the GCF also has readiness technical assistance for countries at an annual funding level of US $1 million per country; the activities under these proposals could include *inter alia* the national climate change action plan (NCAP) and minimum energy performance standard (MEPS) for equipment.

58. The GCF indicated that it was eager to explore options to collaborate with the Multilateral Fund in the context of the GCF Operational Framework for Complementarity and Coherence,[36] in line with the mandate in the GCF Government instrument. Furthermore, the GCF is a country-driven fund and would be responsive to interest on the part of countries that would like to see synergies between the GCF and Multilateral Fund activities.

59. The GCF also informed the Secretariat that the following two options could be considered for collaboration between the two funds in the short run:

(a) Collaboration via an existing common entity to develop a programme maximizing the impact of funding from both funds (e.g., one of the GCF-accredited agencies can submit a programme to the GCF that leverages resources from the Multilateral Fund for specific components/activities or that builds on previous Multilateral Fund projects); and

(b) Collaboration through a GCF-accredited entity (the GCF has almost 100 accredited entities) to develop a programme maximizing the impact of funding from both funds (e.g., a GCF-accredited entity can build on successful Multilateral Fund demonstration projects through appropriate coordination on such projects/programmes with the relevant National Designated Authority (NDA) to ensure alignment with the GCF Country Programme).[37]

60. In terms of upstream programming, the following two options could be considered in parallel:

(a) Collaboration between institutions to develop and make public a framework or guide showing how countries and entities can rapidly pursue resources from both institutions

[34] Pages 33, 35, 36 of the GCF strategic programming document, February 2019.
[35] Page 77 of the GCF strategic programming document, February 2019. Paradigm shift potential is identified and adopted as one of the investment criteria indicators.
[36] The operational framework for complementarity and coherence operates in a diverse and evolving climate finance landscape. It seeks to strengthen complementarity and enhance coherence with regard to operations and processes across climate finance institutions. The Operational Framework may also incorporate other institutions when appropriate and as the work evolves. Its evolution requires collaboration with the other institutions.
[37] The GCF Country Programme outlines the needs of the country under climate change and how the funding will be used to address these needs, both in terms of mitigation and adaptation.

(e.g., the GCF and the Multilateral Fund Secretariat can jointly develop a narrative in the format of (say) a two-page document outlining how to link the projects/programmes of both entities, how countries can tap these resources, and how to select the proper channels for achieving specific objectives; and

(b) Setting up a mechanism for strategic information sharing between institutions for programming (e.g., a process relating to collaboration between the two Secretariats including responsibilities, information to be disclosed on projects and programmes, and steps of engagement that can be agreed between the Secretariats).

Secretariat's observations

61. The Secretariat notes that both the GEF and the GCF have expressed their interest in exploring synergies while implementing activities that would result in enhancing EE in the RAC sector; in this context, both financial institutions have expressed that sharing information on the Multilateral Fund's activities, including policies on the RAC sector, would be helpful during their project/programme review.[38]

62. Further, under the current framework of the GEF, countries could access funds from their STAR allocation for EE-related activities from the US $143 million available under the CCM area. Under the current framework of the GCF, funds for EE activities in the RAC sector can be accessed only through the AEs; the specific levels of funding for cooling have not been identified.

63. Based on the informal consultations with the GEF and the GCF, the Secretariat considers that there is a limited opportunity for accessing funds from these financial institutions for enhancing EE while replacing HFC-based RAC equipment with equipment using low-GWP refrigerants.

III. ESSENTIAL ELEMENTS OF A DRAFT FRAMEWORK FOR CONSULTATIONS WITH RELEVANT FUNDS AND FINANCIAL INSTITUTIONS TO EXPLORE OPPORTUNITIES FOR MOBILIZATION OF FINANCIAL RESOURCES

64. The Secretariat considers that the framework would need to cover key elements for engagement, as well as the process of engagement for consultations, including the information that needs to be shared with the relevant funds and financial institutions.

Key elements of engagement with funding and financial institutions for mobilizing additional resources

65. The main elements of engagement include the following:

(a) Principles of collaboration, describing the overall objective for the collaboration, project/programmes falling within the framework, country driven approach, levels of funding and mechanisms of replenishment, expected impact, and monitoring and reporting framework;

(b) Governing structure, describing the overall relationship between the Executive Committee of the Multilateral Fund and equivalent committee/board of the relevant funds and financial institutions involved in project/programme development and approval processes, and implementing, monitoring and evaluation units and their reporting processes; and

(c) Operating process, describing the relationship between the Multilateral Fund and the

[38] The Secretariat provides inputs to the GEF upon request on projects relating to cooling, particularly highlighting the importance of promoting and adopting low-GWP refrigerant technologies.

relevant funds and financial institutions in terms of fund flow and management, and the overall operating process *inter alia* the policy development process for projects/programmes, project development, the approval and implementation process, and the project monitoring and reporting process including performance indicators.

66. In order to provide information about the Multilateral Fund and its project review, approval and monitoring process, the importance of EE in cooling, the linkages between the Multilateral Fund project implementation process for refrigerant technology transition and EE, and the need for collaboration between the Multilateral Fund and other funds and financial institutions to address EE, an information note is contained in Annex II to this document.

Process of engagement

67. As a first step, a communication should be sent by the Secretariat, on behalf of the Executive Committee, inviting the equivalent committee/board of the relevant fund or financial institution to engage in consultations aimed at establishing a collaborative bilateral agreement for providing complementary financial resources as a grant to enhance the EE of RAC equipment being converted to low-GWP alternative refrigerants with financial resources from the Multilateral Fund.

68. In facilitating the dialogue between the Executive Committee and the committee/board of the fund or financial institution concerned, the Secretariat could initiate discussions with its secretariat by *inter alia*:

(a) Providing written communication on the Executive Committee decision to mobilize additional resources, including background information on the Multilateral Fund and its overall project management process; the linkages between refrigerant technology and EE; and the potential opportunities for funding activities within the conditions included in the key elements of engagement;

(b) Sharing information on the policies, guidelines and criteria of the Executive Committee for implementing projects under the Multilateral Fund, so that funds and financial institutions may use that information when analyzing their own projects and programmes that relate to the RAC sector;

(c) Sharing information on project experience and case studies on EE in different Multilateral Fund projects and programmes; and

(d) Participating in relevant consultative meetings on EE and cooling for the purpose of sharing information on approved projects relating to EE and cooling, as well as policy decisions by the Executive Committee relating to EE and cooling, to the extent feasible, and providing periodic reporting to the Executive Committee on the outcomes.

Recommendation

69. The Executive Committee may wish:

(a) To note:

(i) Document UNEP/OzL.Pro/ExCom/86/93 presenting the framework for consultations with relevant funds and financial institutions to explore the mobilization of additional financial resources for maintaining or enhancing energy efficiency (EE) when replacing HFCs with low-global-warming-potential (GWP) refrigerants in the refrigeration and air-conditioning (RAC) sector (decision 84/89);

(ii) The policy and management considerations, including the potential magnitude of the financial resources that may be required for enhancing EE when replacing HFCs with low-GWP refrigerants in the RAC sector, described in the document mentioned in sub-paragraph (a)(i) above;

(iii) With appreciation the informal consultations between representatives from the Global Environment Facility and the Secretariat, and between representatives from the Green Climate Fund and the Secretariat on mobilization of financial resources additional to those provided by the Multilateral Fund, for maintaining or enhancing EE when replacing HFCs with low-GWP refrigerants in the RAC sector;

(b) To provide guidance to the Secretariat on whether the additional costs associated with maintaining and/or enhancing the EE of low-GWP or zero-GWP replacement technologies and equipment when phasing down HFCs:

(i) Would be considered eligible for funding by the Executive Committee;

(ii) Should be provided exclusively through mobilisation of financial resources, additional to those provided by the Multilateral Fund; and

(iii) Should be provided through a funding window with predetermined funding level and for a predetermined duration to be established;

(c) To consider whether the existing Multilateral Fund institutions, and the current monitoring and reporting mechanisms are appropriate and adequate for implementing projects for enhancing the EE of low-GWP or zero-GWP replacement technologies and equipment when phasing down HFCs, if agreed by the Executive Committee;

(d) To request the Secretariat:

(i) To use the framework referred to in sub-paragraph (a)(i) above, to hold formal consultations with funding institutions of Governments from non-Article 5 countries that might be interested in providing financial resources for enhancing EE when phasing down HFCs in the RAC sector;

(ii) To prepare a document for consideration at the second meeting of 2022 on:

a. The outcomes of the formal consultations with funding institutions of Governments from non-Article 5 countries referred to in sub-paragraph (d)(i) above; and

b. Key policy and management considerations contained in Section I of the document referred to in sub-paragraph (a)(i) above, taking into account the outcomes of consultations referred to in sub-paragraph (d)(i) above, and the draft criteria for funding the phase-down of HFCs containing *inter alia* a component on EE.

Annex I

ESTIMATED COST FOR ENHANCING THE EE OF RAC EQUIPMENT WHEN PHASING DOWN HFCs

1. Currently, information available in the Multilateral Fund on the incremental costs for enhancing the EE of RAC equipment when phasing down HFCs is limited.[1]

2. As reported in document UNEP/OzL.Pro/ExCom/83/41, the additional costs of adopting energy-efficient conversion from HFC-based RAC equipment in manufacturing facilities would broadly cover design and product development, modification of primary and secondary components (e.g., variable-speed compressors, controls, heat-exchangers, fans) and manufacturing and testing facilities, which can yield efficiency improvements (compared to a baseline design) that can range from 10 per cent to 70 per cent (for a "best in class" unit). Integrated phase-out of HFCs as a refrigerant and the adoption of an energy-efficient low-GWP product would result in a reduction in overall costs of conversion for the industry, mainly due to integrated implementation of equipment and supply-chain redesign and reduced downtime for the modification of manufacturing operations. The capacity-building of manufacturing personnel and necessary supportive measures would result in achieving the sustainable adoption of these options.

3. Based on information collected by the Secretariat from technical sources and technical experts on the manufacturing of domestic and commercial refrigerators and residential and commercial air-conditioners (i.e., RAC equipment), and the information from the completed project for the conversion from HFC-134a to isobutane as refrigerant in manufacturing household refrigerator and of reciprocating compressor of HFC-134a to energy efficient compressors (isobutane) in Walton Hi-Tech Industries Limited (approved at the 80th meeting under decision 78/3(g)), the following data is used to arrive at broad estimates of additional costs for conversion of equipment to energy-efficient products:

(a) In 2020, the estimated total global production of RAC equipment amounted to over 263.3 million units (consisting of 127.4 million domestic refrigerators; 15.0 million commercial refrigerators; and 120.8 million air-conditioners);

(b) The average output of a manufacturing line of domestic and commercial refrigeration equipment amounts to 300,000 units, and 250,000 units of a production line of air-conditioning equipment;

(c) The average capital cost (including design and modifications to the manufacturing lines) for enhancing the EE of the RAC equipment ranges from US $75,000 to US $150,000;

(d) Operating costs relate to additional costs for compressors (inverter technology), controls, fan motor, and thermostat, and ranges from US $15 to US $20 per unit of domestic and commercial refrigeration equipment, and from US $40 to US $50 per air-conditioning unit; and

(e) There is no incremental cost associated with the redesign of the heat exchanger for increasing the EE of the RAC equipment.

[1] The following sources were consulted: document UNEP/OzL.Pro/ExCom/83/42; TEAP Decision XXIX/10 task force report on issues related to EE; Cooling Imperative report prepared by Economist Intelligence Unit, 2019; and the report by the Japan Refrigeration and Air Conditioning Industry Association (JRAIA) of 2017.

4. Based on the above (limited and preliminary) information, the cost of enhancing the EE of all the domestic and commercial refrigerators, and residential and commercial air-conditioners manufactured worldwide ranges between US $7 and US $9 billion, as shown in Table 1. It is estimated that about 70 per cent is manufactured in Article 5-owned enterprises. The reduction in emissions associated with enhanced EE of the RAC equipment amounts to approximately 600 million CO_2 eq tonnes.[2]

Table 1. Estimated cost of enhancing the EE of RAC equipment

RAC equipment	Capital cost		Operating cost		Total cost	
	Minimum	**Maximum**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Domestic	31,800,000	63,600,000	1,911,675,000	2,548,900,000	1,943,475,000	2,612,500,000
Commercial	3,750,000	7,500,000	225,000,000	300,000,000	228,750,000	307,500,000
Air-conditioner	36,225,000	72,450,000	4,832,687,000	6,040,858,750	4,868,912,000	6,113,308,750
Total	**71,775,000**	**143,550,000**	**6,969,362,000**	**8,889,758,750**	**7,041,137,000**	**9,033,308,750**

5. Though the payback to the consumer for adopting EE measures compared to the incremental costs would vary depending upon *inter alia* costs of energy and equipment usage characteristics, the consumer is typically expected to recover the initial outlay of funds in 2 to 3 years; further the added benefit would also include lesser demand on energy grid.

[2] Energy savings of 20 per cent are assumed during operations of the equipment with an average lifetime of 15 years. Power savings per year for domestic and commercial refrigerators are assumed to be 130.7 kilowatt hour (KWH), and 653.5 KWH for air-conditioners. Average emission of power consumed is assumed at 0.41 kg CO_2/KWH (equivalent of gas power) assuming a mix in energy supply and likely energy emission trend to low-carbon-intensive energy sources.

Annex II

INFORMATION NOTE ON THE MULTILATERAL FUND AND EE ASPECTS IN RELATION TO RAC EQUIPMENT UNDER THE KIGALI AMENDMENT

Background

1. This note has been prepared to provide information to potential funding institutions relating to the operations of the Multilateral Fund (Multilateral Fund), the importance of EE in the context of HFC phase-down, the experience of the Multilateral Fund Secretariat relating to technology conversion projects in RACHP equipment, and important elements that need to be considered for the framework.

2. This document includes the following sections:

(a) Introduction to the Multilateral Fund;

(b) Overview of the Multilateral Fund project approval and monitoring process;

(c) Importance of cooling and energy consumption in RACHP equipment;

(d) Montreal Protocol project implementation and linkages with refrigerant technology and EE;

(e) Need for collaboration of the Multilateral Fund with other mechanisms, funding and financial institutions for addressing EE; and

(f) Examples of collaboration of the Multilateral Fund with other funding institutions

Introduction to the Multilateral Fund

3. The Multilateral Fund for the implementation of the Montreal Protocol was established in 1991 to assist developing countries in meeting their Montreal Protocol commitments. It is managed by an Executive Committee with equal membership from developed and developing countries; this committee ensures that the funding is provided to the developing countries so that they may achieve their Montreal Protocol commitments in a cost-effective manner, and oversees the project implementation process. The Fund Secretariat in Montreal assists the Committee in this task.

4. The Multilateral Fund was established to meet, on a grant or concessional[1] basis as appropriate, and according to criteria to be decided upon by the Parties, the agreed incremental costs; to finance clearing-house functions;[2] and to finance the secretarial services of the Fund and related support costs.

5. The Multilateral Fund was financed by contributions from non-Article 5 Parties in convertible currency or, in certain circumstances, in kind and/or in national currency, on the basis of the United Nations scale of assessments.[3] The Multilateral Fund has been replenished every three years since 1994 by the

[1] The provision for concessional funding has not been used.

[2] To assist Article 5 Parties, through country-specific studies and other technical co-operation, to identify their needs for co-operation; facilitate technical co-operation to meet these identified needs; distribute, as provided for in Article 9, information and relevant materials, and hold workshops, training sessions, and other related activities, for the benefit of Parties that are developing countries; and facilitate and monitor other multilateral, regional and bilateral co-operation available to Parties that are developing countries.

[3] For convenience the annual amount of contributions for each Party is based on the United Nations scale of assessment adjusted to provide that no one contribution shall exceed 22 per cent of the total.

Parties to the Montreal Protocol,[4] amounting to about US $4.2 billion by 2020.[5] As at December 2020, cash payments from pledged contributions to the Multilateral Fund amounted to about US $4.2 billion and an additional US $27 million was related to bilateral assistance provided by a number of non-Article 5 countries. The average annual funding approved for projects/programmes amounts to about US $150 million.

6. Projects funded by the Multilateral Fund include *inter alia* investment, technical assistance, capacity-building including training, demonstration, institutional strengthening, monitoring and verification and project coordination and management. Projects funded by the Multilateral Fund are predominantly performance-based, including individual or multi-year projects and funded after a detailed assessment of incremental costs in line with Executive Committee decisions. Further, the projects have specific project outputs, operational and financial progress reporting which determines approval of funding of future tranches, implementation procedures including reporting conditions, and compliance targets for phasing out controlled substances. The projects often also include components with external sources of funding when additional resources are needed for implementation; in these cases, funding from different sources have to be synchronized in terms of fund flow and implementation needs, for timely completion of the project.

7. The Multilateral Fund has processes for accepting additional contributions subject to approval by the Executive Committee; such contributions can be used for implementation of specific activities fulfilling criteria approved by the Executive Committee. At the 59th meeting of the Executive Committee, it was proposed that such a facility could maximize climate and other environmental benefits associated with Montreal Protocol activities; at the 70th meeting, voluntary additional contributions for fast-start support for implementation of the Kigali Amendment amounting to up to US $27 million was accepted and utilised for approved HFC phase-down projects and enabling activities.

Overview of the Multilateral Fund's project approval and monitoring process

Triennial business planning

8. Overall planning for projects is done through the three-year rolling business plans which are submitted by the agencies[6] on behalf of the countries for different project activities aimed at achieving the national compliance targets. While some of the project activities have funding approved "in-principle",[7] others are proposed at an estimated fund level in the business plan; timing of the activities and funding levels are typically based on country needs and Executive Committee policy and guidance on funding.

Approval of work programmes and projects

9. Work programmes[8] and projects (e.g., tranche requests for specific countries, new projects) are submitted by the agencies based on the business plans submitted by them. These work programmes are reviewed by the Secretariat and are then presented for approval by the Executive Committee. The Secretariat undertakes a thorough review of the documents based on Executive Committee policies and guidelines, overall project approach as well as implementation plan, and presents an analysis of the findings

[4] As mandated by the Parties, the Technology and Economic Assessment Panel (TEAP) prepares a study analyzing relevant issues and calculates an appropriate replenishment level to finance the Fund's work over the next triennium to assist the Parties.

[5] For the 2018–2020 triennium, the Parties established a replenishment budget of US $540,000,000 (i.e., US $34,000,000 from anticipated contributions due to the Fund and other sources for the 2015–2017 triennium, and US $6,000,000 from interest accruing during the 2018–2020 triennium.

[6] This includes UNDP, UNEP, UNIDO, World Bank (implementing agencies) and bilateral agencies.

[7] For these project activities, the Executive Committee has already decided "in-principle" funding levels.

[8] Work programme includes project activities that are submitted by the agencies for approval by the Executive Committee at each meeting.

to the Executive Committee for its consideration for approval. Upon approval, the funds approved are released by the Treasurer to the agencies typically about 30 days after approval.

10. Funds approved by the Executive Committee and transferred to the agencies for project implementation are carefully monitored. The funds received, disbursed and returned are very carefully scrutinized, accounted for and reported to the Executive Committee. An important aspect of the mechanism is reporting on any interest earned on balances with the agencies and the return of all unspent balances on projects.

Project monitoring and evaluation

11. Project progress is monitored very closely through specific project reports, such as annual project progress reports that also include financial account reconciliation. Unspent balances on projects are monitored and returned by the agencies on an ongoing basis. Upon completion of projects, except for project preparation and institutional strengthening activities, project completion reports (PCRs) providing a complete overview of project implementation achievements against plans and learning from project implementation, are submitted; the Executive Committee is provided an overview of the information presented in the PCRs. Thematic evaluations of projects are undertaken by the independent monitoring and evaluation officer and the reports are presented to the Executive Committee. These reports are used by the agencies and the Secretariat on future project assessments and evaluations. Some individual projects (e.g., demonstration of specific technologies, HFC phase-out projects) for addressing specific needs are also approved and implemented to achieve specific objectives.

12. From the above, it can be seen that the Multilateral Fund has a robust monitoring and accountability framework and operates under policy guidance from the Executive Committee. The Meeting of the Parties provides overall direction to the Executive Committee on priority areas of action and phase-out programme support for Article 5 countries. Sustainability of project impact is ensured through a country-driven project/programme development and approval process after thorough project/programme review by the Secretariat and approval by the Executive Committee, based on *inter alia* technical soundness, country commitments keeping in view the country's specific market needs, and country compliance requirements. Further, independent monitoring and evaluation approved by the Executive Committee also provides an independent assessment of project outcomes to the Executive Committee which, in turn, provides inputs to the Executive Committee, agencies and the Secretariat on possible actions that could be taken to improve the effectiveness of implementation.

Additional contributions[9]

13. As mentioned earlier, additional contributions for funding specific activities approved by the Executive Committee are accepted after careful consideration of such contributions by the Executive Committee, and are managed by the Multilateral Fund Secretariat. In the past, such additional contributions in the form of grants were accepted by the Executive Committee after detailed consultations relating to the objectives to be achieved through the use of the funds. The activities for which these funds were to be utilized were approved by the Executive Committee; after approval, these activities were monitored and reported on through processes similar to those for funds approved under the regular contributions. These funds were managed by the Treasurer based on specific agreements with the funding institutions (e.g., Governments of donor countries).

14. Projects approved through these funds are monitored and reported in line with conditions associated with these projects; the monitoring and reporting framework broadly follows the monitoring and reporting

[9] Additional contributions are funds that are in addition to the regular replenishment funding; at the 77th meeting of the Executive Committee held in November 2016, additional contributions amounting to US $27 million were accepted by the Executive Committee to fast-start support for implementation of the Kigali Amendment.

framework for regular contributions explained above. The information relating to these funds including balances are presented separately in the Executive Committee and progress reports.

Importance of cooling and energy consumption in RACHP equipment

15. In the context of the Montreal Protocol, measures to improve EE and use energy-efficient RAC equipment would provide climate benefits in addition to benefits achieved while phasing out HFCs. According to the Montreal Protocol's Scientific Assessment Panel "improvements in EE in refrigeration and air-conditioner equipment during the transition to low-GWP alternative refrigerants can potentially double the climate benefits of the HFC phase-down of the Kigali Amendment." In this context, the importance of cooling access coupled with energy-efficient performance of cooling equipment need to be understood.

16. Cooling access has become an important issue that needs to be addressed to achieve the Sustainable Development Goals (SDGs). Estimates made by a study undertaken under the leadership of the Sustainable Energy for All team[10] indicates that by 2050, work-hour losses are expected to be more than 2 per cent in ten world regions, and as high as 12 per cent in the worst-affected regions. Losses worth billions of US dollars and as much as 6 per cent of annual gross domestic product (GDP) are estimated in the worst-affected regions of South Asia and West Africa. The report also mentions an estimated 470 million people living in poor rural areas without access to electricity and cold chains for food and medicines, 630 million slum dwellers living in hotter-climate urban areas where electricity services do not exist or are intermittent or are too expensive, and 2.3 billion people in the increasingly affluent lower middle class in developing countries who are on the brink of purchasing the most affordable and likely least efficient air conditioners. All of these situations are vulnerable to actions taken in cooling applications, and represent an opportunity to avoid a huge burden through sustainable, efficient and affordable cooling technologies.

17. Energy consumption in refrigeration and air-conditioning, and heat pump applications has largely received attention at the consumer level and at the national level. International Energy Agency (IEA) reports[11] show that electricity use for cooling worldwide in 2016 was about 2,000 TWH, which is about 10 percent of electricity consumption in all sectors; the share of total energy consumption taken up by space cooling in residential buildings grew from about 2.5 per cent in 1990 to 6 per cent in 2016; this trend in growth is steady if not accelerating. In commercial buildings, the share grew from 6 per cent in 1990 to 11.5 per cent in 2016.

18. Currently, refrigeration and air-conditioning applications consume about 20 per cent of overall electricity used; this is expected to grow due to both global warming and increasing demand for refrigeration in different sectors. Based on estimates made by the International Institute of Refrigeration (IIR), the global electricity demand for refrigeration and air-conditioning could double by 2050 and in the case of space air-conditioning, the electricity needs are expected to triple by 2050; further, around 37 per cent of this global-warming impact is due to direct emissions (leakage) of fluorinated refrigerants (CFCs, HCFCs and HFCs), while the remaining 63 per cent is due to indirect emissions originating from the electricity production required to power the systems. The IIR estimates that refrigeration-and-air-conditioning-related emissions account for 4.14 gigatons of CO_2-equivalent, representing 7.8 percent of global GHG emissions. Such high levels of emissions necessitate actions for reducing direct emissions of fluorinated gases and reducing the primary energy use of this equipment.

19. A report by the Economist Intelligence Unit (EIU) on cooling shows that the annual sales of different types of cooling equipment are expected to grow from around 315 million in 2016 to 460 million

[10] Chilling prospects: Providing sustainable cooling for all, Sustainable Energy for All and Kigali Cooling Efficiency Program.
[11] "The Future of Cooling - Opportunities for energy-efficient air conditioning", OECD/IEA report, 2018.

in 2030[12]; this growth would contribute to higher levels of energy demand in cooling applications if no measures are taken to ensure their energy-efficient operations.

20. Currently, air-conditioning is much less commonplace in lower-income countries that can be hot and humid; use of this type of equipment is often confined to the wealthier segments of the current population. According to IEA estimates, of the 2.8 billion people living in the hottest parts of the world, only 8 per cent have air-conditioners; the estimated population of 1.6 billion air-conditioners in 2016 is expected to grow to more than 5 billion by 2050. Economic growth, though considered an important determinant of air-conditioning demand, may not be the only factor driving air-conditioning growth; hot and humid climatic conditions plays a key role in driving air-conditioning demand. Analysis conducted by the IEA on air-conditioner ownership in 68 countries shows that when cooling degree days (CDD) are over 3,000, higher per-capita income results in steep increases in ownership of air-conditioners for cooling and comfort. Higher urbanization results in increasing demand for air-conditioning from urban pockets. Availability of cooling equipment at affordable prices as well as access and affordability of electricity are important factors that contribute to the growth in air-conditioning.

21. High temperature affects children's learning; fatigue, discomfort when temperature is high, and the possibility of illness due to spoiled food and water-borne illness are key factors that result in negative impacts of learning. Access to cooling can offset this situation. Further, demand for air-conditioning and cooling is becoming a necessity for personal comfort and contributes to the productivity of employees in organizations. The International Labour Organisation (ILO) has warned that a mere 1.5 degrees centigrade increase in global temperature by the end of the century would result in loss of 2.2 per cent of working hours or 80 million jobs by 2030. In addition, temperatures above 25 degrees centigrade can increase levels of discomfort and temperatures above 37 degrees centigrade can produce cardiac failure, heat exhaustion, dehydration and kidney failure. Low-income countries where women often spend more time than men at home are disproportionately affected by lack of access to reliable and cost-effective cooling solutions. As countries shift towards more knowledge-driven digital economies and where employee productivity will be an increasingly significant differentiator of organizational performance, access to reliable and cost-effective cooling will be very important. This again necessitates the implementation of measures to achieve cooling in a sustainable manner.

22. Higher levels of usage of cooling solutions that result in efficient storage and distribution of food can significantly contribute to reducing food wastage. As per the IIR, the food cold chain is still insufficiently developed, especially in developing countries, and better cold-chain access could reduce global food losses that are estimated at about 20 percent of global food supply. Further, to cater to growing global food production needs, minimizing food waste through continuous and ubiquitous refrigeration is necessary. Several studies show that improving access to quality cold-chain infrastructure can reduce waste of agricultural produce and can increase the profitability of enterprises in those businesses; cooling access can improve efficient storage and post-harvest management of farming products, which improves farmers' income. Medical supplies are a critical area that need a well-established cold-chain network.

23. Preservation of pharmaceutical products through refrigerated systems is seeing high growth. According to the IIR the number of heat-sensitive healthcare products increased by 45 per cent between 2011 and 2017, and 1 out of 2 medicines on the market is heat-sensitive. The COVID-19 pandemic is also driving the importance of cooling and EE in the vaccine distribution chain. Reports by building air-conditioning experts have emphasized the importance of indoor air-quality as an important variable to reduce the risk of infection in indoor settings; reports indicate that this would necessitate a combination of ventilation with other controls including filtration of recirculated air in enclosed spaces. Further, cold chain for storage and distribution of vaccines also plays an important role and is currently being carefully

[12] The Cooling Imperative: Forecasting the size and source of future cooling demand; forecasts include cooling demand in residential, commercial, industrial and mobile air-conditioning, as well as domestic, commercial, industrial and transport refrigeration.

addressed by health policy professionals and enterprises involved in vaccine production, storage and distribution. Opportunities for strengthening the cold chains with low-GWP-refrigerant-based equipment are available where investments in strengthening cold chains for vaccines are required.

24. The energy efficiency of air-conditioning equipment has been increasing over the years driven by incremental improvements in air-conditioning technology. The average seasonal EE ratio (SEER) of ACs in the residential sector weighted by sales reached 4.2 in 2016, about 50 per cent higher than 1990s; in commercial air-conditioning, the sales have improved slightly more, i.e., by about 57 per cent since the 1990s, to the same global average of 4.2. The IEA report also indicated that the global best available technology is more than twice as energy efficient as market averages, and more than three times more efficient than the most inefficient models currently available. Even if most of the major cooling markets today have mandatory minimum energy performance standards (MEPS), the required EE levels of these standards in these markets are far below those of the most efficient products available. There is an opportunity for more energy-efficient equipment offtake through appropriate policies and measures for greater supply and demand of energy-efficient cooling equipment.

25. The largest potential for EE improvement of the equipment comes from improvements in total system design and components, which can yield efficiency improvements (compared to a baseline design) that can range from 10 per cent to 70 per cent (for a "best in class" unit)[13]. An integrated approach to RACHP equipment design and selection that includes ensuring minimization of cooling/heating loads, selection of appropriate refrigerant, use of high-efficiency components and system design, ensuring optimized control and operation under all common operating conditions, and designing features that will support servicing and maintenance can contribute to energy savings; this would result in reduced greenhouse gas (GHG) emissions over the life of equipment, reduced energy costs to the end-user and reduced peak electricity demand that would result in lower investments in power generation and distribution capacity.[14]

26. Currently, for improving the EE of equipment, efforts are underway to optimize the systems and components to achieve energy-efficient cooling with new refrigerants.[15] In addition to equipment design, policies and measures for promoting EE, proper "sizing", installation and maintenance of equipment and other factors relating to energy pricing and billing schemes, innovative building design that can result in achieving passive cooling, and maintenance of the equipment play an important role in lowering the energy consumption of air-conditioning equipment. These measures have to be integrated well with measures to reduce high-GWP refrigerant use in those equipment to achieve long-term sustainable GHG emission reduction goals.

Montreal Protocol project implementation and linkages with refrigerant technology and EE

27. The Montreal Protocol bodies have been addressing cooling since 1990s. Initially, the focus was mainly on refrigeration equipment – mainly domestic and commercial equipment using CFCs, besides mobile air-conditioning. During the CFC phase-out era, the equipment was being converted to natural refrigerants like R-600a, R-290, Ammonia and high-GWP HFCs like HFC-134a and R-404A.

28. After the approval of accelerated HCFC phase-out under the Montreal Protocol in September 2007, air-conditioning equipment, mainly in residential and commercial air-conditioning applications, was also being addressed to phase out the use of HCFC-22 as the refrigerant. Refrigerant consumption in air-conditioning equipment, both HCFCs and HFCs, poses a significant challenge under the Montreal Protocol as it is growing fast. While significant efforts were made in implementing projects to ensure that

[13] Updated summary of the report by the Technology and Economic Assessment Panel on matters related to EE with regard to the issues identified in decision 82/83(e) (UNEP/OzL.Pro/ExCom/84/69).
[14] In addition to the above, passive cooling solutions and energy-efficient designs of buildings also contribute to energy-efficient operations of equipment.
[15] Different technical studies indicate that EE improvement efforts in HCFC-based equipment are negligible.

the equipment was converted to low-GWP refrigerants to replace ODS, there have been challenges faced in the pace of adoption of such refrigerants in air-conditioning applications; most of the equipment that are currently sold use HCFC-22 or high-GWP HFC-based refrigerants with the proportion of the latter increasing rapidly.[16]

29. The Secretariat has reviewed and recommended funding for a large number projects in refrigeration and air-conditioning; these projects have been implemented in 145 countries. The applications covered in these projects include domestic and commercial refrigeration and air-conditioning equipment, industrial refrigeration equipment, chillers, mobile air-conditioning and transport air-conditioning equipment; support was also provided to the servicing sector and demonstration projects for equipment manufacturers and installations. The type of projects included conversion of manufacturing facilities to use refrigerants that use low-GWP and/or ozone-friendly technologies, demonstration projects to facilitate faster widespread adoption of these technologies, and technical assistance and capacity-building for sustainable adoption of these technologies through activities focusing on the servicing sector and end-users.

30. It must be noted that certain lower-GWP refrigerant-based equipment (e.g., HFC-32, R-290) are currently being adopted in specific markets; research and product development is also underway for other new refrigerants, typically blends with better performance.[17] The main challenges affecting fast-track adoption of low-GWP refrigerants is potential flammability risk perceived when flammable refrigerants are used, competitive prices, ease of product installation and operations and product performance of equipment using high-GWP refrigerants and lack of integrated policies that not only address the energy efficient performance of these equipment but also controls the use of high-GWP refrigerant-based equipment.

31. The additional cost of interventions for the energy-efficient performance of equipment are not considered eligible for funding under Montreal Protocol, as funding provided by the Multilateral Fund of the Montreal Protocol is for achieving compliance with Montreal Protocol compliance targets. The industry has implemented measures for the energy-efficient design of equipment and components that are affordable for consumers. This effort, over time, has resulted in energy-efficient products at a lower inflation-adjusted price.[18] With the expected high growth in production and use of refrigeration and air-conditioning equipment, there is a strong need for integrated efforts to ensure that the conversion projects achieve both the adoption of low-GWP refrigerants and equipment operating at high EE levels.

32. Proper installation, maintenance and servicing practices play a critical role in minimizing wear-and-tear and ensuring efficient operation of the equipment at the highest feasible EE over the life of the equipment. Assessment of the right size and installation needs of the equipment and building envelope also plays a critical role in the energy-efficient performance of equipment. Servicing sector training activities could build capacity and train technicians in methods to ensure the energy-efficient performance of equipment and change the operating practices of technicians to ensure the energy-efficient and safe operation and maintenance of equipment. With the new types of refrigerants that have different performance and safety characteristics, constant upgrading of the servicing capabilities of technicians keeping in view the alternatives that are entering the market is essential for a smooth transition to low-GWP refrigerants in refrigeration and air-conditioning equipment. Given the number of new designs and models of equipment produced by the private sector, it is imperative that the private sector engaged in the manufacturing and trade of equipment be directly involved in these activities.

[16] Based on reports submitted by the agencies, the proportion of HCFC-based equipment in the sale of RAC equipment is decreasing fast; this is driven by measures implemented by countries under the Montreal Protocol and other policies and regulations driving the EE of equipment.

[17] Blends using low-GWP HFO-based chemicals are under research and products are being introduced in some of the refrigeration and air-conditioning applications.

[18] The Technology and economic assessment panel (TEAP) task force report on the cost and availability of low-GWP technologies/equipment that maintain/enhance EE, September 2019.

33. Through project implementation over almost three decades, the Secretariat has gained rich experience in the incremental needs associated with conversion activities and costs for RACHP equipment, which include: changes in design and product development for refrigerants using new technologies; changes in components and consumables needed;[19] changes in manufacturing facilities to manufacture new equipment using alternative substances; and support needed for the servicing sector[20] for the safe and cost-effective adoption of these technologies. This has helped the Secretariat to develop a good understanding of industry structure and factors that influence technology change and adoption. While EE was not considered an incremental cost and consequently was not assessed as a part of project costs, most of the principles associated with these additional costs are expected to be similar. Further, EE benefits form an integral part of project implementation activities, even though funding to achieve EE benefits is not supported by the Multilateral Fund.

Need for collaboration between the Multilateral Fund and other funds and financial institutions to address EE

34. In the current context, where HCFC phase-out projects are being implemented and projects related to HFC phase-down are expected to commence based on policies defined by the Executive Committee, integrating the adoption of low-GWP refrigerant with EE measures in refrigeration and air-conditioning conversion projects is important as this would be a cost-effective approach for improving EE and sustaining energy-efficient environmentally friendly technologies, while achieving HFC phase-down.

35. A recent study by the TEAP task force on EE has reported that in China, 42 per cent of the 167 million rotary compressors produced in 2017 were of the variable-speed type, compared to five years earlier in 2012, when these were only 30 per cent of 103 million.[21] Over 80 per cent of the compressors produced in China are not exported. An analysis of the models shows that none of the models are HCFC-22 based. This naturally leads to a conclusion that most of these 70 million compressors use R-410A as a refrigerant and are energy efficient. A "no action" scenario would result in an increase in the adoption and growth of these R-410A-based compressors, particularly by enterprises that are not getting funding assistance from the Multilateral Fund, unless low-GWP-technology-based products are adopted very quickly. This situation could be true in the case of other RAC applications depending upon the maturity and costs associated with the adoption HFC-based technologies compared to low-GWP technologies. This provides a compelling reason for immediate and integrated steps for achieving conversion from HFC-based technologies to energy-efficient sustainable options.

36. In the case of countries that import equipment depending upon their national and regional market structures, there is a need to take action that is synchronized with the evolution of the technology and promote the adoption of low-GWP energy-efficient technologies. There is also an increasing push among many of these countries that are import-dependent to adopt measures to reduce dependence on obsolete RAC technology-using products and prevent them from entering the country;[22] in light of the prevailing product market characteristics, an integrated approach for the adoption of energy-efficient low-GWP technologies would result in direct GHG emission reductions through the adoption of low-GWP refrigerant, as well as indirect GHG emission reductions through the reduced energy consumption of the energy-efficient equipment.

37. The above paragraphs demonstrate the importance of integrating EE issues with the implementation framework of projects funded under Multilateral Fund under the new HFC phase-down project

[19] Conversion projects for compressors were also supported to facilitate the adoption of alternative refrigerant technologies.
[20] This includes technical inputs as well as policy/regulations related support for facilitating adoption of environment friendly alternatives.
[21] Nicholson and Booten, 2019.
[22] Discussions relating to and the decision XXX/5. EE standards such as MEPS are at varying degrees of adoption in refrigeration and air-conditioning applications.

implementation era. There is a strong need to promote and implement measures to ensure that projects[23] that relate to HCFC and HFC consumption reduction have strong policy measures that ensure the adoption of integrated EE and low-GWP refrigerant requirements in RAC applications. This would involve interaction with national institutions dealing with EE for ensuring well coordinated and integrated actions. Activities that are not eligible for funding by the Multilateral Fund also need to be "bound" by a comprehensive policy framework to promote the adoption of low-GWP alternatives and systematically reduce dependence on high-GWP refrigerants over time.

38. It is in this context that the Executive Committee proposes to consider potential opportunities for collaborating with other funding institutions for addressing EE aspects relating to HFC phase-down programmes/project activities. This will enable the synchronizing of both HFC phase-down and EE aspects so that the projects/programmes address both of these aspects together and achieve sustainable results cost-effectively.

Examples of Multilateral Fund cooperation with other funding institutions

39. ODS phase-out projects for Montreal Protocol implementation in countries with economies in transition were undertaken through funding from the GEF. While the Multilateral Fund does not directly participate in the GEF's project review process, it does provide support for project review for specific projects when requested. Though the project activities under GEF-funded ODS phase-out could be of similar nature to those of the Multilateral Fund, the cost guidelines and policies of the Executive Committee do not fully apply to these projects. In addition, the Multilateral Fund provides technical review support for the consideration of the GEF review team for both ODS phase-out projects and other projects that relate to cooling applications.

40. To provide fast-start support for implementation of the Kigali amendment, funds amounting to US $27 million were provided by 17 donor countries. These funds were provided for projects relating to enabling activities needed to facilitate early ratification and some priority activities relating to the Kigali Amendment, and investment projects for assessing incremental capital and operating costs for conversion from HFC-based technologies to low-GWP alternatives.[24]

41. There are other initiatives where the Secretariat has, under specific requests and guidance by the Executive Committee, initiated dialogues with other institutions and bodies for additional income from other sources. During a study undertaken on possible legal, structural and administrative issues related to a special funding facility that was presented to the Executive Committee, it was noted that the Multilateral Fund would not be precluded from funding other activities from additional income as long as those activities were related to ODS phase-out or considered to be agreed incremental costs; consultations were also held with the Treasurer on how the treasury function could accommodate funds under this facility.[25] Discussions on this were discontinued after the 60th meeting of the Committee due to lack of consensus on moving forward on this matter.

42. When additional funding is proposed to be provided to the Multilateral Fund from bilateral agencies or similar institutions, the Executive Committee carefully considers the specific cases where funding is proposed. These cases are deliberated and based on the consultations, funds are accepted if agreed by the Executive Committee. These funds typically follow the governing processes of the Multilateral Fund and would be used for projects approved by the Executive Committee. Paragraphs 44 to 59 of the paper on information on relevant funds and financial institutions mobilizing resources for EE that may be utilized

[23] Eligibility is defined in terms of Montreal Protocol policies and guidelines (e.g., cut-off date, capacity, technology upgrade, foreign ownership).
[24] Decision 78/3(g).
[25] UNEP/OzL.Pro/ExCom/57/64, UNEP/OzL.Pro/ExCom/58/49, UNEP/OzL.Pro/ExCom/59/54, and UNEP/OzL.Pro/ExCom/60/Inf.2

when phasing down HFCs (decision 82/83(d))[26] details the different cases where funds were offered to the Multilateral Fund, and the outcomes of each such situation.

[26] UNEP/OzL.Pro/ExCom/83/41