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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
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Addendum

**REPORT ON IMPLEMENTATION OF APPROVED PROJECTS WITH SPECIFIC
REPORTING REQUIREMENTS**

This addendum is being issued to:

- **Add** para. 2bis

2bis. Furthermore, the Executive Committee may wish to consider a progress report on chillers projects.

- **Replace** para. 59 **with** the following:

59. On behalf of the Government of India, the Government of Germany withdrew the submission on the progress report on the implementation of India's national CFC consumption phase-out plan focusing on the refrigeration service sector and 2009 work programme, due to delays in the preparation of the verification report.

- **Add** the following paragraphs:

Progress made in chiller projects

Summary

88. The main issues of the report on progress made in the chiller projects are provided in the following:

- Basis: Decision 55/5(d) of the Executive Committee, which requested the Secretariat to report on progress made in all chiller projects, and to consult the Global Environment Facility and the implementing agencies on resolving related issues.

- History: Funding window of US \$15.2 million for the chiller sector approved at 45th Meeting, approval of seven projects at 47th and 48th Meetings, providing the final funding for the chiller sector to demonstrate the availability and use of co-financing based on additional benefits related to improvements in energy consumption;
- First broad approach to secure co-financing for MLF projects across a number of different approaches. The successful crafting of several partnerships based on this understanding marks an important first step for the Fund. Three groups of co-financing can be identified:
 - The owners or users of chillers, i.e. counterpart funds for projects in Eastern Europe and in the Syrian Arab Republic (Syria);
 - Climate-oriented Official Development Aid (ODA) including bilateral ODA (France, Canada) for projects in Cuba and Africa, Global Environment Facility (GEF) for projects in South America and the global chiller project; and
 - Third party private sector funds through selling of emission rights in carbon markets (Clean Development Mechanism, CDM) for the global chiller project, or through monitoring savings incurred by reduced need for investment in electricity infrastructure (electrical utility affiliates) for Brazil and Colombia.
- For projects: Success in terms of access to alternative funding sources is certain/very probable in six cases; one project (Caribbean) might discontinue;

Key experiences and observations

89. There are several key observations to be made from these seven projects. While seven projects can not provide final answers, in the opinion of the Secretariat the findings provide interesting and potentially widely-applicable indications, summarized below:

- (a) The time to secure co-financing varied. ODA funds, with the exception of funds from the GEF, were available between 3 months and two years after project approval, while all GEF funding is advanced but final endorsement still pending after 36 months. National private sector funds could be secured in about 16 months. An approval of a related, globally applicable CDM methodology – a complex but vital step – took about 30 months, and has created the potential for carbon market funding from verified energy savings in the future;
- (b) Counterpart and ODA grant co-financing options might be considered where quick results are needed - about a three to four year time horizon up to project completion (for conversion/replacement projects). In case of widespread use, the aggregated global need for such funds might be significantly larger than their availability under bilateral ODA;
- (c) Innovative funding arrangements (ODA + private sector and/or carbon funding) possess a clearly superior leveraging capacity, in particular where projects create tangible benefits for the co-financing entities. The availability of these funds is limited only by the value of additional benefits the project can generate. If repeated for other objectives, the Multilateral Fund could either seek a convergence between the Fund's objectives and those of potential co-financing entities, or take the objectives of those entities into account in funding policies and project preparation and review;

- (d) The time needed to prepare projects with innovative funding arrangements seems to have two components: Time needed for principal set-up (approval of CDM methodology, developing a financial guarantee system in case of Brazil), and recurring preparation needs for each project. Once the principal set-up has been developed, co-financing from the private sector in combination with bilateral ODA might realistically lead to a four to six year time horizon up to project completion (for conversion/replacement projects);
- (e) For GEF funding, efforts to minimise the time needed for (national) project prioritisation would be meaningful, but realistically might prove difficult beyond a certain point. It should be noted that the relative urgency of Multilateral Fund projects against short-term compliance objectives is presently not matched in the dual, step-by-step process of national prioritisation (“Resource Allocation Framework”) and the GEF project cycle. With the present arrangements, a six to eight year time horizon up to project completion appears realistic (for conversion/replacement projects); and
- (f) The funding window for these chiller demonstration projects was provided in addition to the eligible consumption phase-out through projects, national phase-out plans and TPMPs, and constitutes the final support for the CFC chiller sub-sector. As demonstrated in non Article-5 countries, CFC chiller owners can often stockpile and recycle sufficient amounts of CFC to continue operation for many years and even decades; for replication of above approaches to chiller projects, the project duration mentioned appears acceptable for all different funding options.

Introduction

90. The present paper responds to decision 55/5(d) of the Executive Committee, which requested the Secretariat to “consult the Global Environment Facility and the implementing agencies on resolving co-financing issues with respect to the approval of chiller projects, and when applicable, the related release of funding, and to report to the Executive Committee at its 56th Meeting on progress made in all chiller projects.” The list of projects covered by this document is provided in Annex I¹.

Background

91. In its decision 45/4 (d) at its 45th Meeting, the Executive Committee requested the Secretariat to prepare a study, with input from the implementing agencies, on criteria and modalities for chiller projects that would demonstrate the feasibility of and modalities for replacing centrifugal chillers in the future, through use of resources external to the Multilateral Fund. In the light of decision XVI/13 of the 16th Meeting of the Parties, the Executive Committee also established a funding window amounting to US \$15.2 million for the chiller sector in 2005, and invited implementing and bilateral agencies to present to its 47th Meeting demonstration projects and project preparation under the funding window.

92. The Secretariat presented to the 46th Meeting a policy paper outlining the characteristics of the chiller sub-sector, and describing the existing policies and experience of the Multilateral Fund in the sub-sector. On the basis of lessons learned and discussions with the implementing agencies, the paper also presented proposed criteria and modalities for demonstration projects encompassing, among other considerations, ODS legislation, prior securement of external resources, and maximum funding limits for individual countries. After agreeing on the conditions, the Executive Committee approved project preparation funding for the implementing and bilateral agencies, and directed the Secretariat to report to its 47th Meeting on the experiences gained. UNEP was also requested to submit a project proposal on

¹ This report does not refer to chiller activities under national phase-out plans, e.g. in Ecuador, Mexico and Argentina, since these are not individual chiller projects. Therefore the chiller projects in a number of countries, which were completed several years ago have not been revisited; however, information related to them could be found in document UNEP/OzL.Pro/ExCom/45/Inf.4.

non-investment activities, namely, the establishment of relevant information, dissemination and awareness activities on a global level.

93. The Secretariat advised the Executive Committee at its 47th Meeting that it had received a total of seven proposals for demonstration projects from UNDP, UNIDO, the World Bank and Canada, comprising individual country projects, regional projects, and a global project. In analysing the proposals, the Secretariat found that very good technical information had been provided. There was a recognition, in most of the proposals, of the objective to accelerate the phase-out of CFC-based chillers and to replace them with systems that offered additional benefits, typically energy savings, and that these additional benefits should drive further replacement or conversion of other CFC chillers, even in the absence of funding from the Multilateral Fund. However, securing external resources had proved to be the most challenging condition to be met.

94. Following discussion, the Executive Committee decided to approve all the proposals. It also set aside US \$2 million for future projects in the Africa region, which had so far not been presented, and requested UNEP to resubmit an amended project proposal on disseminating information on the chiller projects at a global level. At its 48th Meeting, the Executive Committee approved US \$2 million in funding for a chiller demonstration project for the Africa Region, presented by UNIDO as lead agency. An amended global technical assistance programme submitted by UNEP was also approved with funding of US \$200,000.

95. The approved project proposals suggested co-financing from a variety of sources, namely, the GEF, Carbon Financing, CIDA, the French Global Environment Facility, implementing agency funding and counterpart funding. As per the Executive Committee's decision, the Secretariat was required to confirm the availability of the external resources at the level defined in the decision. Annex I summarizes the portfolio of investment projects approved by the Executive Committee at its 47th and 48th Meetings.

Progress Report

96. In response to decision 55/5(d) of the Executive Committee requesting a progress report on the chiller projects, the Secretariat distributed a three-part questionnaire to the three lead implementing agencies for chiller investment projects, namely UNDP, UNIDO and the World Bank. In the questionnaire, the agencies were requested to provide the following: a brief assessment of the experience to date and results achieved, a description of the co-financing mechanism used, and a summary of the activities undertaken.

97. The co-financing sources described in the projects fall into three broad categories: counterpart, Official Development Assistance (ODA) grant, and innovative funding arrangements. The Government of Brazil also provided some funding for its chiller project. These categories are further described below.

98. The responses indicate that for the most part the agencies retained the originally proposed co-financing options. However, some projects show an increase in the amounts realized or expected from such co-financing, as compared to the minimum levels originally approved by the Executive Committee. Annex II presents the current picture of current co-financing options and levels as presented in the responses to the questionnaire.

99. The following section gives a brief overview of the experiences reported in the various projects, according to the three main categories of co-financing options. It also provides an analysis of the preliminary outcomes of each co-financing option with respect to the following four factors: the extent to which the project provides for replication and sustainability; the amount of funds leveraged; the length of time taken to secure funds; and the current level of operational achievement.

Co-financing Option 1: Counterpart Funds (Eastern Europe and Syria)

100. This option was utilized by UNIDO in its projects in Eastern Europe and Syria, where incentives were provided to chiller owners in the form of substantially reduced purchase costs of non-CFC based replacement chillers. The projects were received with great interest from chiller owners, who were ready to provide co-financing immediately. In some of the Eastern European countries, regulatory pressure is described as having provided an additional incentive in the context of their accession to the European Union and the consequent need to comply with the European Community's CFC regulations.

101. For both projects, the potential for replicating the results without additional assistance from the Multilateral Fund is unclear. No specific reference to this was made in the response to the questionnaire for the Syria project. For the project in Europe, it is reported that in cases where the chiller owner owned more than one CFC-based chiller, the grant was considered as an incentive to convert the remaining chillers. The potential for additional chiller replacements would therefore appear to depend on the will of the chiller owners themselves. With regard to funds leveraged, the funds obtained from co-financing as a proportion of the total funding is approximately 31 per cent for the projects in Europe, and 32 per cent for the project in Syria. In the case of Syria, the funds realized from co-financing significantly exceeded the originally foreseen amount (US \$270,000 compared to US \$27,165 originally foreseen).

102. For both projects, the first partial release was obtained 12 months after project approval. Subsequent amounts were obtained within 28 months. The operational outcome of the projects is quite positive. In Europe, of the 12 chillers targeted for replacement, five have been replaced, and work is in progress to replace five more. In Syria, all three chillers targeted are being replaced in October 2008, and retrofitting is in progress for the four chillers targeted. UNIDO has submitted a request to the Secretariat to release the remaining funding for the Eastern European project, specifically for the chillers in Croatia and Serbia, which is currently under consideration.

Co-financing Option 2: Official Development Assistance (ODA) Grant (Cuba, Africa, and the Caribbean)*Cuba*

103. Implemented by UNDP, the Cuba project was originally planned to receive co-financing solely from the Government of Canada, which however played an instrumental role in additionally securing private sector participation. The chillers in Cuba are government-owned.

104. In terms of replicability, the questionnaire responses only indicate an expectation that "the project will promote chiller replacement in Cuba by showing that new and advanced technology works in Cuba and generates large energy savings." With respect to funds leveraged, the amount of co-financing secured is equivalent to 48 per cent of the total funding.

105. Co-financing was secured within one month of project approval. While some delays in project implementation were encountered due to Hurricane Ike, tangible progress has nevertheless been made. The project's target of providing nine replacement chillers is expected to be achieved soon, with four chillers to be installed in November 2008 and the remaining five in early 2009.

Africa Region

106. The project in the Africa region is being implemented by UNIDO as lead agency, jointly with France, Germany and Japan as cooperating agencies. Since approval, the project has been expanded to six countries from the original five. External funding was secured from the French Global Environment Facility (FGEF), which as a priority encourages projects that reduce carbon consumption through improved energy efficiency. The progress report indicates that it was a challenge to introduce to the FGEF the concept of linking the Kyoto and Montreal Protocols through the replacement of CFC based

chillers with energy efficient, non-CFC based chillers. Nevertheless, the FGEF and the French Environment Ministry were “supportive and enthusiastic” about the concept. The agencies also encountered challenges in orienting participating countries to the FGEF’s project methodology, which differed from what they were accustomed to under the Montreal Protocol.

107. The project includes a component to elaborate a chiller replacement policy and replicate the results of the demonstration. However, no further details are provided in the questionnaire response, particularly with regard to how such replication could take place in the absence of additional funding from the Multilateral Fund. The co-financing secured represents approximately 34 per cent of the total funding for the project.

108. Co-financing was approved within 16 months. The purchase of replacement chillers has been completed for Namibia, and a regional workshop held in Egypt, but the project is not yet fully operationalized.

The Caribbean

109. In the questionnaire, UNDP has indicated that it is no longer actively pursuing the Caribbean projects due to the fact that only two CFC chillers could be identified in the region. Consequently, the project might not be able to fulfil the condition of co-financing since the approved funds are already two and a half times higher than the funding needed to replace two chillers.

Option 3: Innovative Funding Arrangements (Brazil, Colombia and the Global Chiller Replacement Project)

110. This co-financing option was selected by UNDP for its project in Brazil and Colombia, and by the World Bank for its global chiller project, with the participation of a variety of actors/mechanisms: the Global Environment Facility (GEF), the private sector, and the Clean Development Mechanism (CDM).

Brazil

111. Brazil, with the support of the implementing agency UNDP, integrated the chiller project approved by the Multilateral Fund into a larger but closely-related undertaking. The objective of this larger undertaking is to foster energy efficiency investments in private and public buildings, with a special emphasis on demonstrating the energy efficiency potential of non-CFC based chillers, by addressing the technical and financial barriers that exist in the country. In Brazil, electricity distribution companies are mandated to spend at least 1 per cent of their operational liquid income on R&D and energy efficiency programmes. A number of them have agreed to use these resources, amounting to US \$50 million, to implement the project through their affiliated energy service companies (ESCOs), which generate income by providing energy efficiency services. ESCOs have historically faced barriers in accessing credit from the banking system, in view of which UNDP submitted a project proposal to the GEF requesting funding of US \$13.75 million. This funding would be used to create a Partial Performance Guarantee Mechanism (PPGM), a risk mitigation tool that would stimulate banks to accept the energy savings guarantees of ESCOs as collateral for loans. At the GEF’s request, a finance institution, the Inter-American Development Bank (IDB), was identified to administer the PPGM. This necessitated a redrafting of the proposal, while the introduction of the GEF’s Resource Allocation Framework required obtaining government approval.

112. The project has a strong replicability objective, which encompasses capacity building, and improved access to financing for energy efficiency initiatives in order to “influence, transform, and develop the market for energy-efficient building operations in Brazil and move towards a less carbon intensive and more sustainable energy consumption path in the country”. The amount of co-financing leveraged represents approximately 98 per cent of the total funding.

113. It took 19 months to obtain co-financing in the form of GEF Council approval and private sector co-financing; however, final endorsement by the GEF Chief Executive Officer is still pending. None of the 12 targeted chiller replacements defined under the Multilateral Fund's project approval have taken place yet.

Colombia

114. Similarly to the Brazil project, UNDP has incorporated additional activities to the project originally approved for Colombia, resulting in a broader initiative. This new initiative is aimed at promoting energy efficiency in buildings by removing institutional, legal and regulatory, capacity and technical barriers that presently limit its widespread adoption in the country. In addition to the primary outcome of stimulation of demand and supply for energy efficiency services and technology, which encompasses chiller replacement, other outcomes include enactment and establishment of regulations and institutions to promote energy efficiency in buildings; and enhanced capacity regarding energy conservation. The private sector is expected to play a key role in the primary outcome, both as the provider of equipment and as the buyer. UNDP is seeking co-financing of US \$1 million from the GEF, and US \$3 million from the private sector. Possible financial incentive mechanisms for securing the participation of the private sector are still under discussion.

115. By aiming to bring about a change in prevailing market and institutional conditions in order to promote energy efficiency, the project is inherently designed for replication and to achieve more than the initial target of 13 chiller replacements. The expected co-financing, if successfully obtained, would represent 80 per cent of total funding.

116. It took 14 months to obtain initial GEF approval; however, final approval is pending the elaboration of a fully developed project proposal.² As previously indicated, private sector co-funding is still under discussion. The operational activities have not commenced, pending finalization of the co-financing arrangements. The submission of the full project documentation to the GEF, which would imply completion of all funding arrangements, is expected by UNDP for the end of 2008.

Global Chiller Project

117. The World Bank's global chiller project was approved for implementation in seven individual countries (China, India, Indonesia, Jordan, Malaysia, the Philippines and Tunisia). The participation of Malaysia, which has only HCFC chillers, has since been cancelled. Tunisia is yet to confirm its participation, while co-financing modalities are under discussion for implementation in China and Indonesia.

118. The Bank's activities have thus far been focused on securing co-financing for the chiller replacement projects in India and the Philippines. The projects aim to provide incentives to chiller owners averaging 20 per cent of the purchase cost of a new chiller, using funds from the Multilateral Fund and the GEF. In return, chiller owners will surrender the ownership of future carbon credits to the Project. Under the Clean Development Mechanism (CDM), the revenues expected from these carbon credits will be used as incentives for replacement of additional chillers, as well as to finance the project's management costs. A technical assistance component is included in the form of energy conservation practices in large buildings, shared from the US EPA's Energy Star Programme. A very high interest and positive response has been received from chiller owners, financial institutions and other partners.

119. The CDM is a mechanism institutionalised in the Kyoto Protocol, where actual reductions in emissions are reported and verified, and accordingly Certified Emission Reductions (CER) are issued by the CDM Board. These CERs are a tradable commodity that can be set off against part of the emission

² More details on the GEF approval process are contained in the section of this paper on "Projects Related to the Global Environment Facility".

reduction obligations of the industrialised countries under the Kyoto Protocol. CERs have a market price, depending on the supply and demand, similar to any other commodity. Before such CERs can be issued, a so-called methodology detailing the determination of reductions in CO₂ emissions needs to be approved by the CDM Board, the responsible body under the Kyoto Protocol. Once approved, such a methodology can be repeatedly used for similar projects; the approval of a methodology is commonly seen to be the major milestone in the preparation of a CDM project. The procedure outlined above implies that such CERs can only be issued after the actual emission reductions have taken place. This implies that for related projects, all funding is retrospective, and the trading characteristics mean that the exact level of income is not predictable before sales take place, although historical data and experience allows an upper and lower border to be defined between which the future sales price will be located with a high probability.

120. Replicating the eventual outcomes, and contributing to increased energy efficiency, is clearly a central objective of the project, as “it is expected that the entire chiller sector in a country will be transformed with seed funds from the Multilateral Fund and the GEF, but eventually through revenue generated by the CDM. It is also hoped that chiller replacement will cause chiller owners to seek other energy efficiency measures in their buildings, either alone or in partnership with other energy efficiency programs in the country.”

121. Taking into account GEF co-financing alone, the additional funds leveraged amount to approximately 82 per cent of the total funding. However, this proportion increases to 94 per cent when the estimated CDM revenues are included.³

122. An initial 160 chillers are targeted for replacement in India and the Philippines with Multilateral Fund and GEF seed funding, but operational activities have not commenced. The groundwork necessary to obtain co-financing has been a time-consuming process. The approval process for GEF funding has not yet reached the stage of endorsement by the GEF’s Chief Executive Officer. In addition, CDM revenue will only be realized, at the earliest, after partial implementation of the project and the selling of associated carbon credits. The section below provides additional details on the GEF funding process.

123. It should be recognized that some projects were reduced in scope, following a determination that fewer CFC-based chillers were in use than originally envisaged. It appears that some countries originally targeted in the projects made the switch from CFC based chillers on their own (for example in the Caribbean and in Malaysia). This can be attributed to countries’ own determination to comply with the requirements of the Montreal Protocol, which has made CFCs more expensive and will eventually lead to their unavailability on the market.

Projects related to the Global Environment Facility

124. The Executive Committee had requested that the Secretariat should consult the GEF, and the implementing agencies on resolving co-financing issues with respect to the approval of chiller projects and, when applicable, the related release of funding.

³ Of the original funds approved for the project, the World Bank intends to allocate US \$1 million each to India and the Philippines. The calculations have therefore been made on the basis of a total of US \$2 million funding from the Multilateral Fund. The according ratios for the remaining funding under the project, or for an overall approach, were not calculated for lack of sufficient information.

125. With respect to co-financing or expected co-financing associated with the GEF, four of the Multilateral Fund chiller projects approved by the 47th Meeting in November 2007 are affected. These are:

- (a) Brazil: “Demonstration project for integrated management of the centrifugal chiller sub-sector, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers” (UNDP);
- (b) Regional project Caribbean: “Demonstration project for integrated management of the centrifugal chiller sub-sector in the Caribbean, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers” (UNDP);
- (c) Colombia: “Demonstration project for integrated management of the centrifugal chiller sub-sector, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers” (UNDP); and
- (d) Global: “Global chiller replacement project (China, India, Indonesia, Malaysia and Philippines; Tunisia and Jordan)” (World Bank).

126. From the GEF perspective, the present status is somewhat similar for the projects in Brazil, Colombia, India (part of the Global chiller project) and Philippines (part of the Global chiller project). An important part in the GEF project cycle is the approval of a Project Identification Form, PIF, which specifies the funding level and project concept, and allows the agency to prepare the final project document. For so called full size projects, this approval is typically at the time when the GEF Council is to discuss the project at one of their meetings. For Brazil and India, the PIF (respectively its equivalent) has been approved by the GEF Council (the GEF’s equivalent of the Executive Committee); for the Philippines, such approval is expected in November 2008 following its submission in September. For Colombia, intended as a medium size project with less funding and having therefore a simplified procedure, the PIF has also been approved. Once the project is fully developed, relevant documentation is submitted to the GEF Secretariat and, after publishing and based on a non-objection procedure, is endorsed by the GEF’s Chief Executive Officer. The present status of these projects in relation to GEF funding is shown in the following table:

Country/region (as per MLF approval)	GEF title		MLF funding; confirmation status
	Co-funding sought by GEF	Status / remaining conditions regarding GEF funding	
Brazil (UNDP)	GEF title: <i>Market Transformation for Energy Efficiency in Buildings</i>		US \$1,000,000; Confirmation not yet requested
	US \$13,500,000	approved 01/07; pending submission of project description	
Caribbean (UNDP)	-0-	Submission not likely	US \$1,000,000
Colombia (UNDP)	GEF title: <i>CO-EFFICIENCY: Improving Energy Efficiency in Buildings in Colombia through Synergies between Environmental Conventions</i>		US \$1,000,000; Confirmation not yet requested
	US \$975,000	PIF approved 01/08; pending submission of project description, planned for end of 08	
Global (India/WB)	GEF title: <i>Chiller Energy Efficiency Project - under the Programmatic Framework for Energy Efficiency</i>		US \$6,884,612; Confirmation requested/under consideration
	US \$6,300,000	PIF approved 04/08; pending submission of project description	
Global (Philippines/WB)	GEF title: <i>Chiller Energy Efficiency Project</i>		
	US \$2,600,000	PIF submitted 09/08, approval PIF expected for 11/08	

Country/region (as per MLF approval)	<i>GEF title</i>		MLF funding; confirmation status
	Co-funding sought by GEF	Status / remaining conditions regarding GEF funding	
Global (Jordan/WB)	-	Jordan has completely used its allocation under the resource allocation framework and can not receive GEF funding in this GEF replenishment	
Global (China, Indonesia, Malaysia, Tunisia/WB)	-	The GEF Secretariat pointed out that nothing in the dialogue with the countries indicates that they want to include chiller energy efficiency projects in their GEF climate change allocation	

127. The Multilateral Fund and the GEF Secretariats have discussed the issue of time needed for the preparation of projects related to the Multilateral Fund and the GEF, in light of experiences reported by implementing agencies.

128. The chiller projects approved in the 47th and 48th Meeting of the Executive Committee, i.e. in November 2005 and April 2006, respectively, were submitted to the Multilateral Fund based on requests of the National Ozone Unit on behalf of the government, and through the branch of the implementing agency dealing with the Montreal Protocol and the Multilateral Fund.

129. In August 2006, the GEF replenishment was agreed, and with it the RAF was adopted. The RAF established a new modality to prioritize funding within the GEF, namely to allocate to a given country a fixed funding for each of the GEF focal areas (one of them is Climate Change, relevant for the chiller projects). It is the responsibility of the respective government to prioritize accordingly, typically in consultation with implementing agencies of the GEF. The possibilities for projects under the heading of climate change are broader than those under the Montreal Protocol, and the demand for projects significantly exceeds the funding available. There are no defined quantifiable short-term objectives under the climate change treaties akin to the reductions in production or consumption in the Montreal Protocol which would guide the prioritization. The representatives of the implementing agencies of the Multilateral Fund and of the National Ozone Units had to convince their GEF-related counterparts in their organizations to prioritize chiller projects versus other possible climate related GEF projects. The relevant processes have therefore been very time consuming.

130. Once there is agreement to assign priority to a chiller project it has to adhere to the GEF procedures and requirements resulting from the review of submissions, which were in some cases conflicting with prior arrangements made by implementing agencies during the earlier phases of project preparation. These included, for example in the case of Brazil, the integration of an additional implementer, the Inter-American Development Bank, into the project.

131. The experience gained through these projects appears to suggest that significant time could be saved in their preparation if already not only decision makers for Ozone, but also for Climate Change, could be involved both in the early stage at the country and the agency levels. From the perspective of the Multilateral Fund these should indicate any issues early-on, in particular deviating priorities or other potential barriers to a subsequent prioritisation and funding request to the GEF or any similar institution. The institutionalisation of such requirements, for example by requesting recognition of the project proposal by certain relevant stake holders such as GEF focal points, etc. might interfere with the Multilateral Fund's prioritisation process based on compliance modelling, which requires relatively short response times from countries and agencies.

132. At the present point in time, the GEF Secretariat is awaiting the finalisation of the project documentation for essentially all of the respective projects, with the exception of the sub-project in the Philippines where the Council approval of the PIF is expected shortly. No co-financing issues with respect to the approval of chiller projects needed to be resolved.

Conclusion

133. The table below summarizes the trend so far observed for the three co-financing options with respect to the four factors.

FACTORS	CO-FINANCING OPTIONS		
	Counterpart	Standard ODA Grant	Innovative Funding Arrangements
COUNTRIES/REGIONS	Eastern Europe, Syria	Cuba, Africa, and the Caribbean	Brazil, Colombia Global Chiller Project
1. Potential for replication without additional Fund investment Definitions Low: No inherent replication or activities to support replication Moderate: Includes activities to support replication High: Replication is inherent	Low	Moderate (in some cases) / Low	High
2. Funds leveraged as a percentage of total funding Definitions Low: Less than 35% Moderate: 35% - 65% High: More than 65%	Low	Moderate/Low	High
3. Rapidity of Securing Funds After Project Approval Definitions Low: More than 24 months Moderate: 12 – 24 months High: Less than 12 months	Moderate	Moderate/High	Moderate/Low
4. Operational Achievement in terms of Chillers Replaced/In the Process of Being Replaced Definitions Low: less than 35% Moderate: 35% – 65% High: more than 65%	High	Moderate	Low

134. It should be recalled that a key aspect of the Executive Committee's decision to fund the chiller projects was to establish the extent to which the project has an in-built **potential for replication** in the absence of additional resources from the Fund. The findings so far indicate that this varies according to the co-financing option that was selected. In the case of counterpart funding, the potential for replication seems to have been limited to, at a maximum, any additional chillers owned by the beneficiaries that they wished to replace. Where standard ODA grant funding was used, there appears to be a more strongly expressed intent that the chiller replacement projects would provide some demonstration value and serve as a model for similar initiatives elsewhere in the country, but the potential outcome of this has not been

further elaborated in the agencies submissions and remains somewhat opaque. In contrast, where co-financing was provided through innovative funding arrangements, the replication of the results beyond the initial target represents a core objective. The ultimate aim of such projects is not to replace a specific limited number of chillers, but rather to provide a stimulus that will lead to a transformed market environment where ozone-friendly chillers, and beyond that, energy efficient buildings, become the options of choice.

135. With regard to the **amount of funds leveraged** from the Multilateral Fund's initial investment, it should be noted that the availability of the funds reported by the agencies as having been raised through co-financing are yet to be confirmed by the Secretariat for a number of projects, namely the global chiller project, the projects in Brazil, Colombia, the Caribbean and, to a limited extent, for the projects in Eastern Europe (activities in Croatia and Serbia). On the basis of agencies' reports thus far, it can be concluded that the amount of funds leveraged varies with the co-financing option used, with the lowest amount of leveraging coming from counterpart sources and moderately higher levels from bilateral agencies. Notwithstanding the fact that the amounts are estimated and still subject to confirmation, a clearly superior leveraging capacity is evident in the third category of projects, where the co-financing obtained from the GEF is supplemented with co-financing generated by providing profit-based incentives to third party beneficiaries in the form of industry actors or the carbon credit market.

136. The experiences so far indicate that the **time taken to secure co-financing** from counterparts as well as the ODA grants was often moderately short, whereas for projects using innovative funding arrangements, such as the GEF in combination with the CDM or national actors, the process has taken significantly more time.

137. This has translated into a similar pattern with respect to the **operational achievements** in terms of the number of chillers actually replaced, as the projects that were able to get the funds relatively quickly were naturally able to embark on project activities earlier. However, it is important to note one fact: the projects that secured co-financing after lengthy negotiations in the standard ODA grant and innovative funding arrangement scenarios did so in a relatively new context for the Multilateral Fund, namely, the common ground between achieving energy efficiency and protecting the ozone layer. The successful crafting of a partnership based on this understanding marks an important first step for the Fund.

138. From the results so far, it can be estimated that under the counterpart and ODA grant co-financing options, the length of a project cycle from preparation to completion would be three to four years (for conversion/replacement projects), which is similar to the time horizon currently observed for projects financed solely by the Multilateral Fund. For the private sector component of innovative funding arrangements, the time needed to prepare projects seems to have two components: firstly, the principal set-up (such as approval of CDM methodology, and developing a financial guarantee system in case of Brazil), and secondly, recurring preparation needs for each project. It can be estimated that co-financing from the private sector in combination with bilateral ODA, a combination not used so far, might realistically lead to a four to six year time horizon up to project completion. For innovative funding arrangements using GEF co-financing, given the time needed to secure national prioritization, a six to eight year project cycle seems realistic.

139. As demonstrated in non Article-5 countries, CFC chiller owners can often stockpile and recycle sufficient amounts of CFC to continue operation for many years and even decades; therefore, replication of above approaches to chiller projects, the various project durations mentioned appear acceptable for all different funding options.

140. From these findings, it can be concluded that a number of co-financing or financing options are potentially available, each with their relative advantages and disadvantages. The selection of one option over another will largely depend on the context and aims of the activity being undertaken. Because of

their short processing time, and relatively quick on-the-ground results, the counterpart and ODA grant co-financing options lend themselves more easily to situations where early results are needed (for example, meeting imminent phase-out deadlines). The low amount of funds likely to be leveraged in this manner suggests that they would have more impact in smaller scale, short-term projects.

141. By contrast, the option for co-financing through innovative funding arrangements has a much greater potential in terms of generating significant additional funding (Brazil, Global chiller project), and replication of the project beyond the initial targets set under the Fund's original project approval. The size of the additional funding is largely due to the significant potential benefits for the co-financing parties, whether in terms of environmental gains (in the case of the GEF) or profit-maximization (in the case of ESCOs and the CDM). Pursuing such a co-financing option is therefore most likely to be successful where there is convergence between the Fund's objectives and those of potential partners. However, as a considerable amount of time and effort is used to establish a common understanding, a desirable outcome of seeking such arrangements would be an established framework that can be used in future as a basis for multiple projects, or for achieving long-range strategic objectives. The approved baseline and monitoring methodology developed by the World Bank for the CDM, is an example of such an outcome.

Way forward

142. Three years after the approval of the funding for most of the chiller projects, progress has been significant, but not fully satisfactory. Across the board the Secretariat has experienced excellent and active co-operation, and a very high degree of initiative on the side of the agencies. As compared to existing projects with full grant funding from the Multilateral Fund, the implementation of the projects with counterpart co-financing was hardly slower, and the co-financing by counterparts was significantly higher than the minimum required when approving the projects. Despite a short and very dense preparation time for the original projects before the 47th Meeting, the agencies were in most cases able to advance the projects as foreseen in the original submissions, despite major set-backs such as the introduction of the RAF in the GEF. On the other hand, for a number of the projects, even three years after approval the replacement of the first chiller has still not taken place while the CFC phase-out continues and has almost been completed. Still, judging from the experience in industrialised countries, CFC-based chillers will continue to be used for some time to come, and the implementation of the projects continues to make sense in terms of CFC phase-out.

143. Based on the original intention to explore possibilities for broad co-financing, to be identified by the agencies subsequent to approval, in a way that the Multilateral Fund component would only play the role of seed money, three projects, namely from UNDP in Brazil and Colombia and the World Bank's global chiller project, with very different approaches are likely to present very positive outcomes once they reach the status of actual implementation. Depending on the future direction of the Multilateral Fund in regard to energy efficiency, a number of the lessons learned regarding the leveraging of co-financing might prove to be very useful in the near future for the Executive Committee, the Secretariat and the agencies alike.

144. The Secretariat is continuing to assess the requests for confirmation of the availability of the external resources, and at the present point in time, three such requests are being processed. After discussions with the GEF Secretariat, the Secretariat intends to confirm the availability of external resources through the GEF based on the approval of the PIF and up to the amount specified in it, on the background of additional information requested on a case-by-case basis from the agencies. For cases where an approved, applicable CDM methodology is present, the Secretariat intends to confirm the availability of external resources based on a detailed assessment of information provided, taking into account typical current CER market values and potential fluctuations, implementation schedule and possible deviations from it, a discount rate for future income, as well as other relevant data.

Secretariat's recommendation

145. The Executive Committee might wish to:

- (a) Note the report on progress made in all chiller projects, and
- (b) Discuss whether it wishes to take any further action on the basis of the information provided in the report.

Annex I

Chiller investment projects approved at the 47th and 48th Meetings of the Executive Committee

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Minimum Co-funding Requirement and Proposed Sources (US\$)	Implementing Agency
(a)	Demonstration project for integrated management of the centrifugal chiller sub-sector in Brazil, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	1,000,000	75,000	252,000 (GEF, ESCOs)	UNDP
(b)	Regional demonstration project for integrated management of the centrifugal chiller sub-sector in the Caribbean, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	1,000,000	75,000	690,000 (GEF, UNDP internal funds)	UNDP
(c)	Demonstration project for integrated management of the centrifugal chiller sub-sector in Colombia, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	1,000,000	75,000	705,000 (GEF)	UNDP
(d)	Demonstration project for integrated management of the centrifugal chiller sub-sector in Cuba, focusing on application of energy-efficient CFC-free technologies for replacement of CFC-based chillers	984,353	84,654	410,125 (CIDA, UNDP internal funds)	UNDP, Canada
(e)	Demonstration project on the replacement of CFC centrifugal chillers in Croatia, Macedonia FYR, Romania, and Serbia and Montenegro	1,069,074	80,181	416,175 (Counter part funds)	UNIDO
(f)	Demonstration project on the replacement of CFC centrifugal chillers in Syria	585,961	43,947	27,195 (Counter part funds)	UNIDO
(g)	Global chiller replacement project (China, India, Indonesia, Malaysia and Philippines)	6,884,612	516,346	13,769,224 (GEF, CDM)	World Bank
(h)	Strategic demonstration project for accelerated conversion of CFC chillers in 5 African Countries (Cameroon, Egypt, Namibia, Nigeria and Sudan)	2,000,000	218,887	477,876 (French Global Environment Facility)	UNIDO , France, Germany, and Japan

Annex II

Overview of Current Funding for Chiller Investment Projects

Implementing Agency	Country/Region	Project Funding (US\$)	Support Cost (US\$)	Minimum Co-funding Requirement (US\$)	Originally Proposed Sources of Co-funding	Amount of co-funding obtained/expected (US\$)
UNDP	Brazil	1,000,000	75,000	252,000	1. GEF 2. ESCOs .	Total: 65,415,000 Breakdown: 1. 13,750,000 (GEF) 2. 50,000,000 (ESCOs) 3. 165,000 (Govt.) 4. 10% of 15,000,000 provided as a guarantee mechanism by IDB
UNDP	the Caribbean	1,000,000	75,000	690,000	1. GEF 2. UNDP internal funds	Total: 160,000 Source: UNDP Energy TTF (Thematic Trust Fund)
UNDP	Colombia	1,000,000	75,000	705,000	1. GEF	Total : 4,000,000 Breakdown: 1. 1,000,000 (GEF) 2. 3,000,000 (private sector)
UNDP	Cuba	984,353	76,779	410,125	1. Govt. of Canada 2. UNDP internal funds	Total: 901,300* Breakdown: 1. 655,000 CAN\$ (Govt. of Canada) 2. 335,000 CAN\$ (Priv. sector) 3. 40,000 (UNDP Energy TTF)
UNIDO	Eastern Europe (5 countries)	1,069,074	80,181	416,175	Counter part funds	Total: 470,000 Breakdown: 1. 230,000 (5 counterparts) 2. 240,000 (5 counterparts)
UNIDO	Syria	585,961	43,947	27,195	Counter part funds	Total: 270,000 Breakdown: 1. 120,000 (Le Meridien Hotel) 2. 150,000 (El-Basel Hospital)
World Bank	Global project (7 countries)	6,884,612**	516,346	13,769,224	1. GEF 2. CDM	Total: 31,600,000 Breakdown: 1. 6,300,000(GEF-India) 2. 2,600,000 (GEF-Philippines) 3. 15,000,000 (CDM-India) 4. 7,700,000 (CDM-Philippines)

Implementing Agency	Country/Region	Project Funding (US\$)	Support Cost (US\$)	Minimum Co-funding Requirement (US\$)	Originally Proposed Sources of Co-funding	Amount of co-funding obtained/expected (US\$)
France, Germany, Japan and UNIDO	Africa (5 countries)	2,000,000	218,887	477,876	FGEF	Total: 1,027,500*** Source: 750,000 Euro (FGEF)

*This figure is calculated based on the prevailing exchange rate of the Canadian and US dollar at the time co-financing was approved.

**Of this amount, India and the Philippines are to each receive US \$1 million.

***This figure is calculated based on the prevailing exchange rate of the Euro and US dollar at the time co-financing was approved.
