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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Twenty-fifth Meeting
Montreal, 29-31 July 1998

CONCESSIONAL LENDING

This document consists of :

- (1) A Note from the Secretariat on the Study submitted by the World Bank
- (2) An Executive Summary of IFC's Study into the scope for a non-grant financing facility for ODS phase-out
- (3) A Summary of Findings and World Bank Group Recommendations
- (4) A Summary of the project proposal "Building chiller replacement programme to reduce the usage of CFC-11 and CFC-12 in chiller servicing at Electricity Generating Authority of Thailand (EGAT)" in Thailand re-submitted by the World Bank.

**NOTE FROM THE SECRETARIAT
ON
CONCESSIONAL LENDING**

1. The Executive Committee decided at its Twenty-first, Twenty-third, and Twenty-fourth Meetings:

“(b) To approve the request of the World Bank for US \$60,000 toward the cost of a concessional financing study to be carried out by the International Finance Corporation with a view to providing the Executive Committee with a comprehensive report that would:

(i) Explore ways in which private-sector finance can be mobilized to assist Article 5 countries in phasing out ozone-depleting substances, particularly in sectors with a good return on investments in ozone-friendly technologies;

(ii) Provide a final theoretical overview of ways in which concessional funding and other forms of innovative funding, including on-lending, can be used to augment and make most effective use of the resources of the Multilateral Fund.”

(Decision 21/39)

“(a) To request the World Bank to consider how innovative funding could be applied to this or a similar project;

(b) That any project along these lines should be considered in the context of the paper on concessional loans currently being prepared by the World Bank.”

(Decision 23/30)

“(b) To request the World Bank to submit to the Twenty-fifth meeting of the Executive Committee the results of its study on concessional loans, and to resubmit its project proposal on concessional loans in accordance with Decision 23/30.”

(Decision 24/62)

2. In response to these decisions, the World Bank has submitted a report entitled “Study into the scope for a non-grant financing facility for ODS phase-out” which was commissioned by the International Finance Corporation (IFC), a member of the World Bank Group. Due to the length of the report, the Secretariat is submitting the Executive Summary of the study and a Summary of Findings and World Bank Group Recommendations as Annexes I and II to this Note. The full study will be made available to members of the Executive Committee upon request.

3. The World Bank has also re-submitted, in accordance with Decision 23/30, the Thai project proposal "Building chiller replacement programme to reduce the usage of CFC-11 and CFC-12 in chiller servicing at Electricity Generating Authority of Thailand (EGAT)". A summary of this project proposal is included as Annex III; the full proposal will be made available on request.

KPMG

International Finance Corporation IFC

**Study into the scope for a non grant financing facility
for ODS phase-out**

Executive Summary/Final Report

May 1998

KPMG/INFRAS

Executive Summary

Summary, Conclusions and Recommendations

Objectives and Mandate

The International Finance Corporation (IFC) commissioned KPMG Fides Management Consulting with INFRAS as a subcontractor in August 1997 to assess the feasibility of the establishment of a non-grant based financing facility in order to promote and accelerate the phasing out of ozone depleting substances (ODS), both in developing countries as well as in countries with economies in transition (CEIT). The facility is envisaged as being complementary to the Multilateral Fund of the Montreal Protocol (MF) and to the Global Environment Fund (GEF).

The Consultants carried out desktop research and ODS consumption based model calculations and later in 1997 conducted fact finding missions at enterprises and institutions in India, Thailand

and the Ukraine in order to assess the feasibility of the establishment of the non-grant based ODS phase-out financing facility. Furthermore, the Consultants interviewed numerous experts with working experience in the area of ODS elimination, representatives of private sector financing institutions as well as representatives of national and multilateral organisations, all active in the relevant fields and regions.

Main Findings

Desktop research and model calculations showed that there is a substantial gap in the order of USD 750 million between the capital (investment) cost¹ that must be borne by the enterprises and the cost which may be covered by the Multilateral Fund. Especially, a considerable potential (latent) need of phase-out support for Chlorofluorocarbons (CFC) service demand from existing refrigeration and Air Conditioning (A/C) equipment and of „loan on top of grant“ type has been identified. In particular, smaller-scale enterprises basically eligible for grants have not applied for projects yet, because the expected grant amount is perceived to be too small to create a financially viable ODS phase-out project.

The case studies revealed some demand - both concessional and commercial - for loans on top of grants. In the **Ukraine**, currently, there is relatively little scope for a stand-alone credit facility. However, in a couple of cases it could be shown that by supplementing a GEF grant with a credit, an acceleration of the completion of ODS-phase-out may be achieved. In **Thailand** the Consultants identified several cases exemplary for potential deals, mainly in the refrigeration and A/C sector. However, the realisation of such deals are conditional upon the concessionalism offered by the envisaged non-grant financing facility. Further, the **economic crisis in Southeast Asia** presently puts heavy constraints to any market oriented operation. In **India** large enterprises in the domestic refrigeration sector together with several medium sized enterprises in the aerosol sector and one larger enterprise in the process agent sector have been identified as potential candidates for seeking loans in addition to uncertain grants. Furthermore, under an umbrella type credit facility very small enterprises in **West/South Africa**, that could not normally access loan finance, could make a major contribution to a reduction in ODS refrigerant consumption. Based on these case studies, which included interviews with several companies in each country, the demand for non-grant financing has been estimated bottom up :

- It has been found that the dominating form of financing modality is loans, be it commercial or concessional. The potential deal flow volume identified at case study level accounts for USD 40 - 48 million abating a total of about 1900 t of ODS. The interest in other modalities such as interest rate buy-down, equity participation or guarantees has been found to be very limited;
- The search for and analysis of the need for concessional loans in addition to (on top of) grants of the MF to the same project was initially set outside the focus of the investigations in order to avoid the policy issues involved with strongly overlapping areas of the envisaged complementary, non-grant facility with the already existing MF financial support for ODS phase-out. However, in the course of the study the Consultants found numerous cases, where such additional, but not necessarily complementary financing would be requested by interviewed enterprises (USD 50 m). Clearly identified cases of such requests are also presented in the study, but not analysed and quantified in detail. In numerous other cases, however, it could not be identified with certainty, whether such projects would actually fall

¹ Including USD 50 million MeBr projects

under the category receiving a grant and still obtaining an additional support in the form of a concessional loan. Such cases are shown separately, in view of the assumption that part of this population would contribute to the demand for a non-grant facility, provided they would not receive a grant sufficient to initiate the implementation of the project in question.

- By desktop research a minor additional potential demand from Halon and Methyl-Bromide („other“) sector could be identified in addition to the demand identified at the country case study level.

Finally, correlating the findings of the case studies with those of the desktop research and model analysis, a current and future requirement of about USD 1'500 million for financing capital costs of ODS phase out projects in A5 countries has been identified. This financing requirement was found to be generated by two categories of potential projects:

Projects Eligible for MFMP Financing

About USD 800 million is required to provide grants to A5 projects (or portions of) eligible for grant funding from the MFMP based on all rules and constraints except cost-effectiveness (CE) thresholds².

An additional USD 500 million is required to finance those portions of grant eligible A5 projects which are actually not covered by MFMP grants³ (for example projects whose incremental operating savings (e.g., energy savings, chemical savings, etc.) represent a significant portion of the initial incremental capital costs).

Projects Currently Ineligible for MFMP Funding

About USD 200 million is required for A5 projects that are currently ineligible for MFMP funding or projects with uncertain MFMP grants and that includes:

- a) projects for which the ExCom still has to determine its policy, e.g., end-user replacements and retrofits (chillers, refrigerators, etc.), methyl bromide, etc. The refrigeration sector dominates this demand and most projects are associated with servicing/retrofit in the user sector. Most of these are small projects with the majority requiring investments of under USD 250,000.
- b) projects (or portions of) that are ineligible for MFMP support including those with significant exports to non-A5 countries, ownership by non-A5 transnational companies, and consumption initiated after 7/95.

The main focus of the study has been on investigating the potential deal flow for a facility that would provide financing complementary and additional to that provided by the MFMP. The demand generated by projects currently ineligible for MFMP funding form the bulk of this demand and allow to establish the deal flow for a facility without risking precedents for grants, conflicts and/or competition with the MFMP, and without the necessity of the involvement of more than one Implementing Agency on the same project. The potential demand for non grant financing for such a facility has been identified as USD 226 million.

The financing modes eventually found to be relevant for this subset of projects fitting into a non-grant facility complementary to the MF, and included in the summary tables and figures illustrating the main findings of the study for operation of a facility complementary to MFMP/GEF, are as follows:

² The use of cost effectiveness thresholds at current levels is expected to reduce this by about 20-40% or to about USD 500-650 million.

³ This estimate increases to about USD 650-800 million with the introduction of CE thresholds.

Commercial terms	Loans on commercial terms, no matter whether the company did or did not receive a grant.
Concessional, no grants	Loans on concessional terms for projects that do not receive grants.
Concessional, grant uncertain	Cases where a company would need a concessional loan but there is uncertainty, whether it would or would not receive a grant and fall into the category of „double dipping“ or not ⁴ .

The estimated potential deal volumes for the envisaged non-grant facility are summarised in the following Table S-1. USD 200 million of this potential deal volume fall, as mentioned above, into Article 5 countries, USD 26 million have been identified in CEIT countries.

financing modality	total potential deal flow (in USD million)	of which „Green technology“ (USD million)
commercial terms	76	33
concessional, no grants	107	22
concessional, grant uncertain	43	34
total	226	89

Table S- 1 Total Deal Volume Identified

Figure S- 1 below shows the resulting deal flows in the various ODS sectors, whilst in Figure S- 2 the deal flow estimates for the geographical regions are summarised.

⁴ The colloquial term „double dipping“ is used in the study for cases when a company receives financial support twice: once in the form of a grant according to the procedures of the MF and then in addition to this in the form of a concessional loan according to the procedures to be developed for the envisaged non-grant facility.

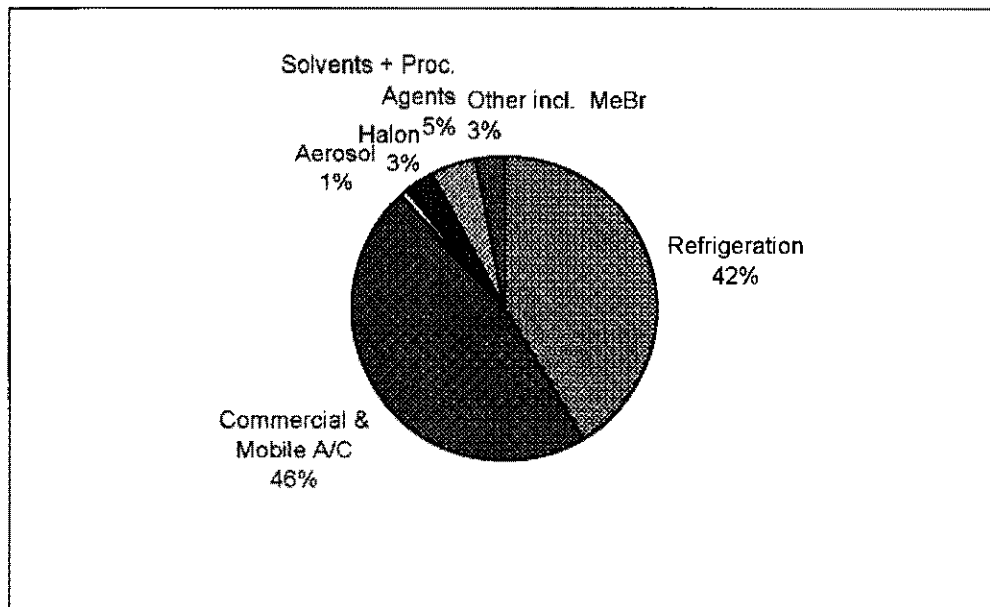


Figure S- 1 Deal Flow Estimate According to ODS Sector

On a global basis the largest share of potential deal flow has been found in the refrigeration sector. It may be concluded that a focus on this specific sector is viable, since potentially bankable projects have also been found mainly in this sector.

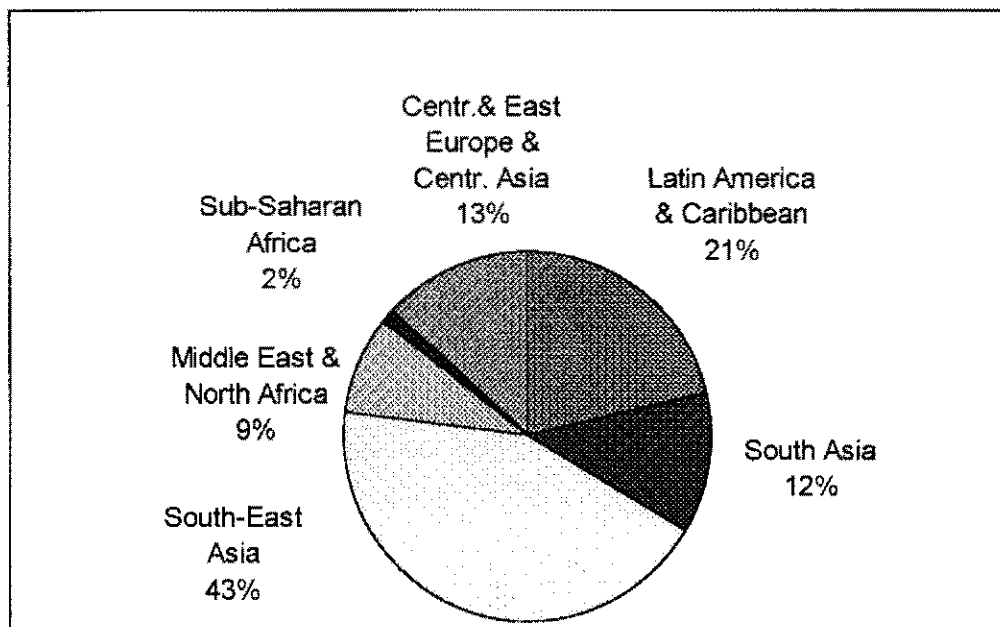


Figure S- 2 Deal Flow Estimate according to Geographical Region

From the financing gap of USD 750 million capital cost to be born by enterprises in Article 5 countries in projects not initiated yet⁵; a balance amount of 550 million would fall into projects for

⁵ Including USD 50 million MeBr projects

which a loan would have to be placed on top of a grant (mostly „double dipping“ cases). There is thus scope for the MFMP to adopt concessional lending irrespective of whether the complementary non-grant facility investigated in this study is launched or not.

About half of the deals identified at case study level may be expected to range between USD 100'000 and USD 200'000 each. About 40% of the deals are expected to be in the bracket of less than USD 50'000 (mainly service demand in refrigeration and air conditioning sector). This class would lend itself to umbrella type facilities or highly standardised, i.e. clear and simple, credit procedures, allowing for a certain laxity and probability of default, respectively for non-compliance with strict ODS phase-out procedures - thereby most likely lowering transaction costs substantially. Hence, instead of enforcing e.g. 100% compliance in terms of ODS phase-out which would imply prohibitively high transactions costs for this small deal-size-category, less stringent rules may be preferable.

A wide range of opinions concerning the modalities and the viability of the envisaged non-grant financing facility were gathered from the various institutions concerned (banks, multilateral and international organisations as well as governmental agencies) which will be difficult to be combined under one and the same facility. Nevertheless, compromises between the perceptions encountered appear to be possible. In terms of options that the facility may support a focus on lending - both commercial and concessional - and including the potential of guarantees to enterprises or intermediaries appears to be preferred. Equity financing is, in general terms, looked upon favourably by the institutions. This instrument, however, is not seen to be operable under the same umbrella as a lending instrument.

The potential of commercial co-financing was investigated both at the level of large international commercial banks as well as at the level of local banks. It has been found that if the envisaged non-grant financing facility were to be managed by an institution such as the IFC, i.e. with a function of „lender of last resort“, and would process deals in the order of magnitude of USD 1 million or above, then there may be potential for an international commercial bank to participate in loans on a case by case basis. However, it has been found unlikely that international commercial banks would engage themselves in participating in the envisaged facility beyond the above mentioned case by case basis.

The example of a local bank in the Ukraine showed a general willingness and interest in managing a non-grant ODS phase-out financing facility, either in trust or directly, through a multilateral credit line. However, due to prevailing political and economic instabilities in many CEITs as well as Article (5) countries, it is unlikely that local banks in general will be able to participate on a co-financing basis.

Observations and Conclusions

The methodology underlying the findings summarised in the above tables and figures leads generally to a conservative (fairly low) estimate of the total business volume for the envisaged non-grant facility.

Looking at the distribution of the total potential deal flow according to financing modality, sector and geographical region, it becomes apparent that the "independent from MF procedures, strictly complementary" -and consequently simple to deal with- part of this volume is in the "commercial" category, which is estimated to be about 80 million USD. Given the uncertainties in the estimates and given the fact that the future facility may not be able to encompass all that is on the market, the achievable business volume of the facility may be estimated to be a **few tens of millions of USD** if it were to concentrate only on projects that may be dealt with relatively independently from MF regulations.

If the sponsors and future management of the facility would engage themselves in the confrontations necessary to clarify the potentially overlapping political issues with the MF, and attract concessional and uncertain concessional loan on top of grant cases as well, the business volume may become obviously substantially larger.

- Additional financing needs resulting from the restrictions of the MF eligibility criteria⁶ (i.e. grant reductions due to operational savings, exports and foreign ownership, latter of which particularly in the refrigeration sector) represent the bulk of the potential need and demand identified for the non-grant facility.
- Scope for non-grant based operations relatively independent of the Montreal Protocol and its associated policy issues has been found in the following cases:
 - Early replacement or retrofit of CFC based refrigeration and A/C equipment.
 - Enterprises ineligible for grants on the basis of high exports⁷.
 - New ventures of potentially ODS consuming enterprises established after 1995 and complementary efforts such as building up a supply chain for hydrocarbon aerosol propellant (HAP) or introducing hydrocarbon refrigerant through new enterprises formerly not active in an ODS related business. Both types of ventures are not eligible for MF grants.
 - Green final technologies with low Global Warming Potential and zero ODP⁸.
- The Consultants have not found any enterprises with readily implementable projects to be financed on a non-grant basis. Furthermore, none of the interviewed enterprises would

⁶ Cost effectiveness thresholds imposed by MF procedures (turning out as a barrier particularly to SME's and thus representing also one of the reasons for demand for a non-grant facility) may be raised in the future with the effect of accelerating ODS phase-out, but also removing part of the demand for non-grant financing in favour of grant financing. This effect can not be quantified at the time of writing the present study.

⁷ example from solvent sector: Industry Case in Thailand, see also Annex to the report.

⁸ This field of operation gains importance since HFCs have become controlled substances under the Kyoto Protocol of the Climate Convention. For example, in the frame of the Thailand case study the issue was discussed whether HCFC123 chiller replacement (Montreal Protocol transitional) should receive the same financing conditions as replacement by HFC134a (Kyoto Protocol transitional) or, in the mid term, absorption or ammonia technical options (long term sustainable).

voluntarily give up a grant for a non-grant financing facility, be it on strictly commercial terms or on concessional terms.⁹

- In a number of sub-sectors the ODS phase-out process appears to come to a gridlock (particularly in the cases where the more difficult, costly and complex projects still remain to be done) when only the present set of MF policies is offered to enterprises. If, however, a non-grant based facility is proposed to solve the compliance problems that continue to remain unsettled by the grants under the funding mechanism of the Montreal Protocol¹⁰, then North-South policy conflicts may most likely be expected.
- One of the main concerns shared by most of the interviewees from the agency side is the magnitude of expected transaction costs (establishment of efficient financial intermediary etc.) which are expected to be higher than in the past, as the potential target group will comprise of more and more Small- and Medium sized Enterprises (SMEs).

Recommendations

Based on the conclusions and observations made by the Consultants, the following recommendations are made:

- Establishment of a **pilot facility in the order of USD 20 to 30 million** for a period of 3 to 5 years.
- Among others, the facility should address the following needs for additional and complementary financing, relatively independent from the MFMP and its associated policy issues:
 - **Support of ODS phase-out ventures complementary to the operations of the Multilateral Fund**, such as new ventures, hydrocarbon refrigerant purification bottling and marketing;
 - Projects targeting ozone layer protection **including greenhouse gas mitigation**;
 - Inclusion of concessional elements in the terms of the facility.
- Although equity financing is in general terms looked upon favourably by the stakeholding institutions, this instrument should not be offered under the same umbrella as a lending instrument. Thus, given the restrictions of size for a pilot facility, it is recommended to **focus on lending and not on equity participation**.
- Evaluation and careful assessment of any potentially conflicting policy issues related to the MF,
 - to be carried out during the preparatory phase prior to implementing the facility, and
 - to include a detailed analysis of the terms with an element of concessionality.
 - Complementarity as opposed to overlapping areas of responsibilities should be achieved.
- Establishment of a project pipeline based on tentative term sheet agreed upon by the sponsoring parties prior to fully implementing the facility.

⁹ There is the possible exception in the case where the grant portion is relatively small and the bureaucracy very high, i.e. where the grant disbursement takes a long time and/or the conditions placed on such a grant are unacceptable to the enterprise.

¹⁰ Arguing that it is too costly and inefficient to service the full list of incremental costs adopted in the conference of Parties in London 1990 on the basis of grants alone.

- Considering the constraints addressed in the report, including such as expected deal flows, the recent SE Asian economic crisis, etc., India appears to be a reasonable testing ground for a trial operation of the envisaged non-grant financing facility.
- The total **volume potentially available for concessional lending on top of grants** corresponds to the actual capital costs to be born by enterprises on top of a MFMP grant and may be as high as approximately **USD 550 million**, that is up to 2.5 as large as the potential deal flow of the investigated facility complementary to MFMP/GEF.
- Even if the envisaged complementary and additional financing facility should not materialise, **the MFMP might nevertheless consider offering a combination of soft loans and grants** in view that ODS-consuming enterprises involved in ODS phase-out project preparation in a more or less advanced stage often requested soft loans in addition to the grant that is perceived by them to be too small.
- In view of the additional tasks associated with lending as compared with granting¹¹, the provision of concessional lending on top of MFMP grants is reasonably allocated to an experienced financial institution within the same institutional framework that is already dealing with the provision of grants in order to avoid potential conflicts of policies and in order to allow synergies in the area of project evaluation, implementation monitoring, etc.

¹¹ Credit assessment and monitoring, security for default, processing and tracking of disbursements as well as of recovered funds, treasury management, etc.

STUDY ON NON-GRANT FINANCING FOR ODS ELIMINATION SUMMARY OF FINDINGS AND WORLD BANK GROUP RECOMMENDATIONS

Context of Study

The study was commissioned by the International Finance Corporation (IFC), the private sector arm of the World Bank Group (WBG). Funding for the study was provided by the Swiss Government (through its bilateral technical assistance trust fund available via IFC) and the MFMP (partial funding approved by the Executive Committee at its 21st meeting). The study was conducted by KPMG Fides and Infras of Zurich (referred to as “consultant” for the remainder of this paper) with the following scope:

- (i) determine if there is a demand for non-grant financing that could facilitate a faster and more comprehensive ODS phaseout in addition to that likely to be effected by MFMP grants alone;
- (ii) recognizing that Article 10 of the Montreal Protocol allows MFMP resources to be used either as grants or concessional loans to meet agreed incremental costs, distinguish between demand which:
 - (a) could potentially be serviced under current MFMP eligibility rules to make most effective use of the Fund's resources (including through buying down the interest rates on loans by others); and
 - (b) would be for projects that are either ineligible for MFMP funding or have been given a low priority for funding by the MFMP and which have to be serviced by a separate complementary facility.
- (iii) examine if and how private-sector financing and donor-funding (in addition to their contributions to the MFMP) could be mobilized -- particularly for projects in sectors which are expected to yield a good return on investments in ozone-friendly technologies;
- (iv) identify potential demand and deal flow -- especially for a separate complementary facility -- by modality, sector, region, deal size, etc., further distinguishing demand for “final solution” technologies (i.e., technologies and substitutes that were compliant with the Kyoto Protocol as well).

Although the ideal question to ask would have been “What is the best way (grants, loans, combinations, etc.) of utilizing the available donor resources for ODS phase out”, this was mooted because a significant amount of the available resources have already been provided by the MFMP as grants to companies that may well have been able to undertake projects using concessional loans instead of grants.

Analysis Underlying Study's Conclusions and WBG's Recommendations

Desk review and selected country-based case studies (which included interviews with several companies in each country) undertaken by the consultant supports the results of the ICF (1995) and TEAP (1996) studies which estimated that about *\$1,500 million* was still required to finance ODS phaseout in A5 countries. Of this the consultant estimated:

- *\$1,300 million* is required for projects considered “eligible” under the MFMP's, including:
 - *\$800 million* in grants to projects (or portions of projects) eligible for grant funding from the MFMP based on all rules and constraints without applying cost-effectiveness thresholds.

- **\$500 million** to finance portions of projects not covered by MFMP grants, for example, projects where incremental operating savings are a significant portion of the initial incremental capital costs (e.g., energy savings, chemical savings, etc.).¹
- **\$200 million** is required for projects that are currently “ineligible” for MFMP funding, including:
 - projects for which the ExCom still has to determine its policy, e.g., end-user replacements and retrofits (chillers, refrigerators, etc.), methyl bromide, etc. The refrigeration sector dominates this demand and most projects are associated with servicing/retrofit in the user sector. Most of these are small projects with the majority requiring investments of under \$250,000.
 - projects (or portions of projects) that are ineligible for MFMP support including those with significant exports to non-A5 countries, ownership by non-A5 transnational companies, and consumption initiated after 7/95.
 - **\$80 million** of the \$200 million ineligible for MFMP funding has been identified as potential demand by projects that utilize technologies in compliance with both the Montreal and Kyoto Protocols (e.g., hydrocarbons).

Main Conclusions of the Consultant Study

Demand for Non-Grant Financing

- Significant demand of about \$700 million exists for non-grant financing. Of this, the largest share of \$500 million is for loans to projects that are likely to receive only partial funding from MFMP as grants (i.e., demand for “loans on top of grants”).
- There is a sufficient deal flow to justify concessional lending by the MFMP, as well as a separate complementary facility funded by donors. Details of the likely deal flow for such a facility (modality, sector, region, deal size, etc.), as well as some sample projects are available in the consultant’s report.

Financing Modalities

- Only loans should be considered (concessional or commercial) at this time as most of the expressed demand was for such an instrument.
- Guarantees (for loans by other in-country FIs) although not strongly favored could also be considered if that is a more efficient way of providing loans in some situations (e.g., if loans are needed in local currency).
- Interest rate buy-down on loans provided by FIs is not a preferred option as it is tantamount to providing a grant. However, it does require lesser resources than providing the whole amount as a loan and may be the only option if resources for concessional loans are limited.

¹ If cost-effectiveness thresholds continue to be applied at current levels, this financing gap is more likely to be about \$650-800 million

Private Sector Co-financing

- Participation in a “global” fund with the goal of phasing out ODS -- even through non-grant financing mechanisms -- is unlikely to be of interest to international commercial banks or other institutional sources of commercial debt. Exceptions may possibly be in countries (e.g., Netherlands) where tax incentive exist for “green” investments. Furthermore, if participation were to occur, only loans and possibly guarantees would be favored.
- Local commercial banks are also unlikely to offer credit from their own resources to an enterprise with the explicit purpose of financing conversion to an ozone-friendly operation. There are exceptions in some countries where the World Bank’s local financial agent (usually a government-owned institution) provides funding for portions not covered by a MFMP grant.

General WBG Recommendations

Although many of the projects which were the strongest candidates for non-grant funding have already received grants, MFMP should still consider concessional financing (instead of grants) as a viable (and efficient) means of utilizing its available resources to address the remainder of ODS use. While the consultant has identified a potential deal flow for a facility complementary to the MFMP and has recommended establishing a pilot fund of \$20-30 million to provide non-grant funding for projects ineligible for MFMP funding, they have also confirmed that a significantly higher demand of more than \$500 million also exists for additional non-grant financing to projects already served by the MFMP. Additionally, with no financing forthcoming from the private sector, a complementary facility would have to rely solely on donor commitments for its capital. Based on these considerations, it is IFC/WB’s recommendation that:

- A separate complementary facility not be established* and instead the MFMP should consider allocating resources to provide concessional financing itself to service the financing gap of \$500 million, as well as portions of the \$200 million not currently eligible for MFMP grant financing that would have been the target for the complementary facility.
- MFMP should consider becoming a “one-stop shop” for funding ODS projects* by offering financing (including grants) for the “full” costs of an ODS elimination project, thereby facilitating implementation and gaining economic efficiencies in reducing the overall costs of undertaking these projects. It is important to note that it is not being recommended that concessional loans replace grants as the means of financing by the MFMP, but that loans be used in addition to grants (or where appropriate in lieu of grants) as discussed under the specific recommendations below.²

Specific WBG Recommendations

The recommendations below focus on how MFMP resources can be more effectively utilized by directly providing concessional loans in addition to grants:

² It should also be noted that innovation in providing financing already undertaken by some recipient countries -- while to be encouraged for improved utilization of MFMP funds (such as the concessional lending provided to enterprises by TTGV in Turkey) cannot be considered as concessional lending by the MFMP because the funds are still provided as a grant to the country.

- (i) *For projects with a MFMP grant-eligible portions that is significantly less than the total project costs, the option of a concessional loan should also be considered.* This is likely to be especially effective where the project sponsor is unable to arrange financing for the balance, thereby delaying implementation. However, "double-dipping" should be avoided -- that is, no additional benefit beyond the eligible grant component should be provided to such projects. To the extent possible, "full" financing should be provided by the MFMP to facilitate implementation. A combination of a concessional loan and grant should be provided in such a way that the project's financing needs are met, but the total concessionality provided (NPV of concession on loan + reduced grant amount) does not exceed the value of the original grant (see example later). This allows for equity to be maintained in that projects opting for concessional loan do not get an indirect grant larger than what they otherwise would have received.
- (ii) *For projects likely to be eligible for MFMP financing, but with as-yet-undetermined policy by the ExCom, concessional loans (or contingent financing) should be considered to facilitate implementation.* This would serve the purpose of facilitating phase out in end-use sectors such as servicing which have a very large share of current ODS consumption. At the same time this could demonstrate that concessional loans rather than grants are sufficient to eliminate ODS use in this sector. (A small grant component for outreach, training, technical assistance, and dissemination of results may be needed and will need to be determined for each individual project.) As most of these projects tend to be small on an individual basis, several of these could -- and should -- be bundled together for more efficient delivery, e.g., through a line of credit with a local FI, an investment in an ESCO, etc.³
- (iii) *For projects (or portions of) in A5 countries currently ineligible for grants by the MFMP, it may be in the interest of the MFMP to consider providing non-subsidized commercial loans for the ineligible portions to facilitate implementation.* This may be especially important for projects that have significant non-A5 export-orientation (and possibly even foreign-ownership and post-1995 production start-up). Of course, a combination of commercial loan and grant (where eligible) can always be reduced to a concessional loan (with or without an accompanying reduced grant) so that the total value of the concession still does not exceed the eligible grant amount.
- (iv) Although the demand for loans is estimated to exceed \$500 million, it is expected that *MFMP resources for concessional lending will not exceed \$100 million in the initial stages and should be the amount considered for piloting this modality.* Some of these resources will be made available from projects that accept a reduced grant along with a concessional loan. As a comparison, of the \$80 million identified as the relevant deal flow for a facility complementary to the MFMP, the consultant study recommended that the facility be capitalized with only \$20-30 million at this time.
- (v) Although access to concessional financing should be available to all relevant projects regardless of which implementing agency is undertaking them, it is important that the lending institution has the capability to (a) undertake credit evaluation (necessary to assess sponsor and project risk, monitor loans, enforce security for default, etc.); and (b) process and track disbursements as well as recovered funds (loan accounting). *The Executive Committee of the Multilateral Fund may therefore wish to ask the World Bank Group to undertake a pilot for concessional lending* as it has these capabilities already well established.

³ Although possibly best suited for grants among all sectors serviced by the MFMP, small enterprises in the organized and informal sectors are now the ones most likely to be reached through this mechanism.

- (vi) Higher transaction costs are likely to be associated with providing loans vs. simply providing grants and can primarily be attributed to the enhanced credit function associated with evaluating the same projects -- first at approval and later during supervision. Action in the case of defaults on loans may also be required. However, the *MFMP should incorporate the increased transaction costs associated with providing a loan, if any, into the calculation of the loan-grant split* such that (NPV of the concession associated with a loan + reduced grant + transaction costs) does not exceed (original grant + agency fees).

Example

Consider a company with an ODS phase-out project estimated to cost \$1,000,000 in eligible incremental capital costs. Assume that the grant amount is limited to \$500,000 for reasons of cost-effectiveness thresholds and/or projected incremental operating savings. The options that could be considered by the MFMP for this company are:

- Provide \$500,000 in grant and have company arrange financing for balance (current option) -- but potentially risk delays in implementation.
- Provide \$340,000 as a grant and \$660,000 as an interest free loan for 5 years. Assuming a commercial interest rate of 10% and a discount rate of 10%, the implied concession in interest amounts to a NPV of about \$160,000. So the company obtains financing for the "full" cost of the project from the MFMP and still only gets the grant equivalent of \$500,000 (\$340,000 + \$160,000).
- As a variation of the above, the MFMP may consider providing \$400,000 in grant and \$600,000 in a loan that provides a concession of 7 percentage points below the market rate of 10%, i.e., a 5-year loan at 3%. The concession in this case has an NPV of about \$100,000, thereby still limiting the company to a grant of only \$500,000 (\$400,000 + \$100,000).

Note that except for the current option, the MFMP has to commit \$1,000,000 of its resources instead of \$500,000, but is likely to facilitate implementation of the project according to schedule.

Similar examples can be shown to work in cases where companies with significant export-oriented deductions may forgo their grant for a concessional loan in order to have a one-stop access to financing for their projects. The same is likely to be true for other deductions like foreign ownership, capacity and technology upgrades, etc.

**MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE
MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER**

PROJECT COVER SHEET

COUNTRY Kingdom of Thailand

IMPLEMENTING AGENCY The World Bank

PROJECT TITLE Building Chiller Replacement Program to Reduce the Usage of CFC-11 and CFC-12 in the Chiller Sector

PROJECT IN CURRENT BUSINESS PLAN Yes ☒ No ☐

SECTOR/SUB-SECTOR COVERED Chillers

ODS USE IN SECTOR 57.8 MT of CFC-11 in 1993 for servicing (57.8 MT ODP weighted)
2.1 MT of CFC-12 in 1993 for servicing (2.1 MT ODP weighted)

PROJECT IMPACT 488.4 MT ODS (488.4 MT ODP-weighted)

PROJECT DURATION 6 years

PROJECT ECONOMIC LIFE 25 years

TOTAL PROJECT COST Investment Costs US\$4,950,000

COST EFFECTIVENESS n/a

PROPOSED OTF GRANT US\$4,950,000

IMPLEMENTING ENTERPRISE Electricity Generating Authority of Thailand (EGAT)

COORDINATING NATIONAL BODY Department of Industrial Works

PROJECT SUMMARY

This project is requesting financial support of \$4.95 million in form of concessional loans (interest free) from the Multilateral Fund for the establishment of a pilot program revolving fund to finance chiller replacements in existing buildings in Thailand. The whole program would replace about 630 existing CFC chillers (one-third of the existing fleet). Refrigerant recovered from these units would be used for servicing the remaining CFC chillers until the end of their useful life. This initial support from the Multilateral Fund will be used to pilot the program by replacing about 25 CFC chillers. Actual energy savings would be evaluated at the end of the third year. On the basis of the initial results, the Bank and the Thai counterpart would use \$4.95 million provided by the Multilateral Fund to leverage additional resources of \$25 million from other sources.

The proposed pilot phase would allow the implementing enterprise, Electricity Generating Authority of Thailand (EGAT), to monitor and evaluate the performance of new high-efficiency chillers on-the-ground in Thailand. Under this program, EGAT would maintain ownership of new non-CFC chillers and the building owners would incur no costs at the time of installation. EGAT would contract chiller suppliers to provide service and maintenance to all new chillers under this program for the life of the chillers. Savings gained from lower electricity consumption would be shared between EGAT and building owners. Ninety percent of the savings would be channeled back into the proposed revolving fund which is administered by EGAT. A small part of these savings will be used to cover EGAT's administrative cost and costs for public awareness campaign under this program, while a major portion of the saving will be used for purchasing more chillers. As an incentive to participate in this program, building owners will keep the remaining 10% of the savings.

At the end of the third year of the program, EGAT and the Bank would evaluate the success of the project to date. If it is decided that the program should be ended (e.g., if projected energy savings do not materialize), EGAT would use the resources in the revolving fund to repay the Multilateral Fund. If it is decided that the program should be continued, the initial support from the Multilateral Fund would be used to leverage more funding from other sources to complete the second phase of the program. The Executive Committee may consider how initial funding provided by the Multilateral Fund should be repaid after completion of the program.

New chillers operated in industrialized countries like the United States are more energy efficient. Thus, chiller replacement typically pays off by itself within 3-5 years. However, experiences in both developed and developing countries have shown that as long as CFCs are still available, there are few incentives for building owners to replace their old chillers even if CFCs become expensive. Another barrier preventing the widespread replacement of existing CFC chillers with high-efficiency non-CFC units in tropical countries is the perceived risk that savings claimed by chiller manufacturers may not be achievable as the design and ambient conditions are significantly different. In addition, the skill level of servicing technicians in developing countries are significantly different than in developed countries.

To promote early phaseout of the use of CFC chillers it is important that two barriers: high up-front investment cost and perceived risk to realizing savings through application of the new technology, be overcome. The initial support from the Multilateral Fund is needed to establish a revolving fund which offsets up-front costs and to demonstrate energy savings. Once the savings are demonstrated in Thailand, replacement projects in countries with similar climates could be done by providing revolving funds using the EGAT model to overcome the financial barrier.

This type of projects is identified in the concessional loan study carried out by the World Bank Group as a potential project for concessional financing.

The Executive Committee of the Multilateral Fund may wish to request the World Bank to undertake this chiller replacement program in Thailand as a pilot for concessional lending.

The Executive Committee may decide the followings:

- (a) to approve US\$4.95 million as concessional loans (interest free) for establishing a revolving fund to support this chiller replacement program in Thailand; and
- (b) to request the World Bank to report the progress of this project to the Executive Committee at the end of the third year of this project.