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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Twenty-eighth Meeting  
Montreal, 14-16 July 1999

**CIRCUMSTANCES FOR THE CONSIDERATION OF ODS PHASE-OUT IN THE  
COMMERCIAL REFRIGERATION END-USER SECTOR:  
ADDITIONAL CONSIDERATIONS**

## Background

1. At its 21st Meeting, the Executive Committee decided ‘to request the World Bank, in conjunction with the Fund Secretariat, to prepare draft guidelines for the consideration of the Executive Committee at its Twenty-second Meeting.’ After considering an executive summary of draft guidelines at its 11<sup>th</sup> Meeting (Montreal, 18-19 September 1997)<sup>1</sup>, the Sub-committee on Project Review:

- requested a more complete examination of the sector covering, *inter-alia*, projects for users with an installed capacity of less than 10 tonnes, taking into account a report being prepared on the Mexican experience in this sub-sector;
- noted that consideration should be given to associated policy issues to ensure that users did not revert to using ODS after the conversion of their equipment, especially where such substances were still cheap and/or where enforcement capacities are lacking, and;
- requested that information obtained during the development of refrigerant management plans be used to analyse the commercial refrigeration sector *per se*.

2. Subsequently, at its 25<sup>th</sup> Meeting the Executive Committee considered a paper jointly prepared by the World Bank and the Fund Secretariat (UNEP/OzL.Pro/ExCom/25/58). *Inter-alia*, the paper:

- outlined the profile of the sub-sector and its possible ODS consumption;
- indicated the high level of ODS emissions from equipment used in the sub-sector;
- recalled current policies of the Parties and the Executive Committee;
- discussed the risks associated with sustainability of end-user conversion projects;
- outlined technical options for retrofit;
- presented costs as experienced by conversion of a large supermarket chain in Mexico, and;
- based on these costs, determined that the potential liability of the Multilateral Fund might lie between US \$581 million and US \$1.4 billion.

3. In Decision 26/38, the Executive Committee decided, in the light of the information contained in the World Bank’s report and the views expressed at the 26<sup>th</sup> Meeting, to request the Secretariat, in conjunction with the implementing agencies to prepare a paper on the circumstances under which the Committee could consider projects from Article 5 countries to retrofit commercial refrigeration appliances and on how the incremental costs of such projects should be calculated. The draft paper would be sent to Executive Committee members for review and would subsequently be finalised by the Secretariat with the aim of giving the Sub-Committee information on which to base a recommendation on the subject to the Executive Committee at its next meeting.

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<sup>1</sup> The report of the Sub-Committee’s deliberations is contained in UNEP/OzL.Pro/ExCom/23/10.

4. The paper prepared in response to this decision (UNEP/OzL.Pro/ExCom/27/39) contained possible initial guidelines for projects in this sub-sector. The guidelines included the following provisions:

- retrofitting of refrigeration equipment should continue to be assessed on a case-by-case basis taking into consideration the importance of the commercial refrigeration sub-sector of the country;
- training of refrigeration technicians should be recognised as part of end-user conversion activity in the refrigeration sector. It should continue to be encouraged as part of a refrigerant management plan;
- retrofitting of commercial refrigeration equipment could be considered for funding after assessing the experience gained from implementation of the relevant parts of a refrigerant management plan in low-volume consuming countries which must reduce consumption in the refrigeration servicing sector to meet their Montreal Protocol commitments;
- retrofitting projects should not be funded until the necessary policy support measures enunciated in the refrigerant management plan are in place and demonstrated to be effective;
- for the initial period, pending review, priority should be given to projects for the conversion of cold stores in the agricultural, fisheries or other food-chain industries which are important for the economies of the countries concerned;
- for the initial period, the costs associated with replacement of the refrigerant, replacement of the oil and minor capital items where necessary, and labour at the local labour rate, will be eligible as incremental costs. More extensive conversions including reconditioning or replacement of compressors and major overhaul of refrigeration systems will not be considered under the initial guidelines. Incremental operating costs and savings should be calculated as for other commercial refrigeration projects for a two year period;
- enterprise consumption will be the average annual quantity of CFC refrigerant which can be established as having been added to the refrigeration system over a minimum of the last three years;
- no cost effectiveness threshold needs to be established for this initial period as thresholds are not applied in projects emanating from LVCs. However a funding window of US \$10 million could be established, from within the investment project allocation;
- these guidelines should be reviewed after being in operation for 18 months.

5. At its 27<sup>th</sup> Meeting the Executive Committee noted views expressed by members of the Sub-Committee on Project Review and requested the Secretariat and implementing agencies to

refine the proposed guidelines taking into account the comments made by members of the Sub-committee (Decision 27/77).

## Discussion

6. The comments made by members of the Sub-committee on Project Review can be grouped into several distinct categories with differing implications for the commencement of activities in this sub-sector.

7. The first category is remarks that seek more information:

- that much more information on the sector was needed
- that clarification was needed on what was meant by “minor capital items”

8. The second category is remarks which do not support commencement of end-user conversion activities at this time:

- that funding should be concentrated on the production sector rather than for end-user conversion
- that with current low CFC prices end user-conversions would not be economically viable or sustainable.

9. The third category is remarks which support the recognition of LVCs as a priority area for these activities:

- that the paper is important for low-volume-consuming countries specifically, since these countries did not obtain other types of funding in the form of investment projects, and since this funding window would probably be the only assistance they would receive towards meeting the 50 per cent CFC reduction measure scheduled for 2005
- that priority should be given to projects in a wider range of areas (within LVCs)
- that the list of applications that would receive assistance as indicated in paragraph 29 of the paper (i.e. within LVCs) would include refrigeration systems in hospitals.

10. The fourth category is a remark which does not support the proposal to commence activities in LVCs only:

- that projects should also be open to non-low-volume-consuming countries.

11. The fifth category is a remark that specifically seeks to include a particular technical option in any project activities that are commenced:

- That “compressor replacement” would be included as a cost-item that would be eligible for funding.

### More Information

12. The division of CFC consumption in the refrigeration sector between use in manufacturing and use for servicing in the end-user sub-sector is acknowledged as one of the most difficult pieces of data to establish. However it is known that LVCs which are very small consumers are likely to have most of their national CFC consumption in the refrigeration servicing sector.

13. Analysis undertaken by the Fund Secretariat using data from country programmes, that is, before projects began to be implemented in the country concerned, indicates that LVCs initially had an average of 70 percent of their national consumption of Annex A substances in the refrigeration sector. Non-LVCs had an average of 33 percent of their consumption in the refrigeration sector. For some 46 percent of LVCs, refrigeration accounted for 90 percent or more of their consumption. For some 38 percent of LVCs, 95 percent or more of their consumption was confined to refrigeration, almost exclusively for servicing.

14. Subsequently, data supplemented by information from Article 7 consumption reports, from projects documents and from reports on the progress with implementation of country programmes was examined to attempt to present a more up to date picture taking into account the impact of completed projects. However at this stage an insufficient number of countries have provided the necessary information to allow a meaningful statistical comparison with the original country programme data. Nonetheless, it can be expected that this percentage will increase now that national consumption is frozen and the rate of completion of investment projects is continuing to grow.

15. Predicting how quickly the refrigeration sector will become predominant in the remaining national consumption of non-LVCs is difficult at this stage as the relevant information on trends and timescales is not currently available. However it is certain that in due course, when their investment projects are complete, the consumption profile of non-LVCs will become similar to the current profile of LVCs, that is, almost all consumption will be for refrigeration servicing.

16. The information in the two preceding paragraphs emphasises the importance of servicing the end-users of the refrigeration sector in the final phase-out plans of all countries. However, end-user conversion activity may not command a high priority at the present time for countries which are able to meet their current Montreal Protocol commitments, through the completion of industrial conversion projects, including the range of sectoral phase out proposals and SME initiatives currently being prepared or implemented.

17. With regard to the specific request for clarification of "minor capital items" appearing in the guidelines proposed in the previous paper, the term is intended to refer to replacement of such system components as filters and dryers, expansion valves, pipe fittings *etcetera* which might need replacement in the course of undertaking conversion of existing CFC-12 based refrigeration systems to operate with non-CFC service blend refrigerants.

The view that end user conversions should not be funded at present

18. This position is consistent with arguments presented in the paper previously submitted to the 27<sup>th</sup> Meeting regarding sustainability of conversion when CFCs are cheap and readily available and regarding developed country experiences in which enterprises attempt to obtain the maximum economic life from existing equipment and convert only when CFC availability and price make it an economic necessity: that is, near the end of the phase-out period.

19. It follows that this would indicate that any activities in this sector might proceed only on a trial basis or for specific high priority applications such as countries which have no alternative means of reducing consumption to meet their compliance obligations.

The view that LVCs should be recognised as a priority area

20. The rationale for undertaking activities related to end-user conversions for LVCs was presented in the previous paper (paragraphs 9-10, 24) and summarised above. It is based on the need and opportunities for LVCs to meet Montreal Protocol consumption reductions. Such activities are consistent with, and complementary to, the aims of refrigerant management plans for LVCs and, if funded, should be undertaken as part of an RMP.

21. There may also be a view that end user conversion projects should be funded in LVCs because this may be the only opportunity for such countries to access significant MLF funding. While this position may have a superficial appeal on equity grounds, the MLF is not a development fund and this view alone cannot be taken as justification for expenditure.

22. With regard to giving priority to projects in a wider range of activities, the intention is to target areas of higher economic importance to the countries concerned, and which are likely to also have higher ODS consumption and a higher level of technical expertise. Without being proscriptive about particular industrial activities, enterprises with these characteristics would offer the best opportunities to undertake useful, sustainable projects in the initial stages of work in this sector.

23. Concerning hospitals, the major use of ODS is likely to be in chillers which are not included in the commercial refrigeration end-user sector and are not the subject of this paper.

The view that activities should be extended now to countries other than LVCs

24. The issue of where to begin possible funding of servicing and end-user conversion activities is discussed in the previous paper especially paragraphs 5-10. The allocation of priority to LVCs was reviewed above. However, the most significant question may not be whether a country is, or is not, an LVC, but rather, whether the circumstances in any country are such that end-user conversion activities are sustainable, are a cost-effective means of facilitating Montreal Protocol compliance and justify the allocation of priority for funding by the Executive Committee. These circumstances include: whether the supply of CFCs in a country is limited, because of effective action at the national or international level, including cessation of production; whether more cost effective means of achieving reductions in consumption are still available to the country, in which case they might be implemented first, and; whether sufficient information is available about the pattern of consumption in the country to enable the

formulation of effective proposals. These circumstances are likely to arise in most Article-5 countries eventually. At the time when the circumstances prevail in any particular country, whether it is an LVC or not, then the funding of certain end user activities may be considered.

25. The interest in opening up a new area of activity for project development and funding can be appreciated. It extends the overall level of activity under the MLF and the flow of funds to Article 5 countries. It also maintains the momentum of business operations by stakeholders including the implementing agencies. But the ultimate test has to be the potential contribution of the activity to achievement of the objectives Multilateral Fund. At this stage these objectives may be best obtained through a more modest, but carefully targeted approach to end-user conversions. When industrial conversions are completed, the remaining consumption will be in the servicing and end-user sector, and will be similar to the situation prevailing now in many LVCs. A trial programme in countries with no remaining consumption in industrial sectors may provide the means to develop efficient and cost-effective modalities to address the end-user sector, which could then be replicated at the appropriate time.

#### Inclusion of compressor replacement

26. At issue is the determination of what is essential to implement a retrofit in the most cost effective way. As covered in the previous paper (paragraph 21) alternative refrigerants which all contain a proportion of HCFCs, need little change to existing equipment and are now fully commercialised. If projects are funded using this technology for the transitional period until the existing equipment reaches the end of its useful lifetime (at which stage it would be replaced with non-ODS equipment by the enterprises concerned at no cost to the Fund), there would be no need to change the compressor in a refrigeration system in order to phase out the CFC refrigerant. This approach would achieve the objective of maximising the economic life of compressor and other equipment now in place, and avoid the premature replacement of otherwise useful refrigeration systems. Other technical solutions such as the use of HFC-134a may require a new compressor in some circumstances, but funding of this option may not be a priority when a more cost-effective alternative is commercially available to enable countries to meet their Montreal Protocol obligations.

#### Coordination

27. The implementing agencies were consulted in the preparation of this paper. One implementing agency, the World Bank, proposed that, in countries which did not at the present time meet necessary circumstances for grant funding of end user activities, projects might be considered on the basis of a loan mechanism.

28. Any such loan mechanism would:

- be likely to involve larger enterprises which would have a greater opportunity to ensure sustainability of the conversion
- be self-regulating in that enterprises which sought loan funding would be committed to the conversion and those which were not committed at this time would not apply.

## Conclusions

29. An attempt has been made to provide an analysis of the various issues raised in the comments made by members of the Sub-Committee on project Review at the 27<sup>th</sup> Meeting. Several of these issues are incompatible, for instance: that no priority should be given to end-user conversion at the present time, and; that priority should be accorded now to end user conversions related to activities in LVCs. The Executive Committee is invited to provide guidance in resolving these basic incompatibilities.

30. In doing so the Committee might consider returning to the theme captured in the title of the paper presented to the 27<sup>th</sup> Meeting, namely, to consider *the circumstances under which priority should be accorded to activities associated with end-user conversions*. Depending on how they are defined, these circumstances may or may not apply now to various Article 5 countries according to their individual circumstances and the progress they have made in their implementation of their country programmes. The circumstances are likely to apply to all countries at the appropriate time in the future, towards the end of their phase-out programmes and as the phase out dates for Article 5 countries become closer.

31. Relevant circumstances which might need to prevail could include:

- that the country concerned is not, or is no longer, a producer of ODS
- that the country has import controls on ODS in place and effectively enforced
- that at the time of seeking compensation in the form of grants for end-user conversions, the country can establish that it has implemented an effective recovery and recycling programme and that its remaining consumption is for the servicing of refrigeration and air conditioning equipment
- to establish the above, that comprehensive data on the profile of all remaining consumption has been determined and made available to the Executive Committee.

32. When these circumstances can be established for an individual country, the Executive Committee might consider that priority could be given to the funding of projects for certain end user activities in that country.

33. The Fund Secretariat could incorporate decisions on the above matters, as appropriate, into the draft guidelines presented in the previous paper (and restated in paragraph 4 above), for confirmation at a future meeting.