



United Nations Environment Programme



Distr.
LIMITED



UNEP/OzL.Pro/ExCom/10/15
3 June 1993

ORIGINAL: ENGLISH

Executive Committee of the
Multilateral Fund for the
Implementation of the Montreal Protocol

Tenth Meeting
Montreal, 28-30 June 1993

1993 WORLD BANK WORK PROGRAMME AMENDMENT

This document includes:

- Comments and Recommendations of the Fund Secretariat
- World Bank Work Programme Amendment

Comments and Recommendations of the Fund Secretariat

Comments

1. The World Bank has submitted a request for six supplemental activities costing below US \$500,000 as amendments to its 1993 work programme. Through this request, the Bank is seeking the Executive Committee's approval for the following proposed activities:

User-Sector Project Identification and Preparation (Argentina)	US \$100,000
Production Sector Pre-Investment Studies (China)	US \$240,000
User Sector Pre-Investment Studies (China)	US \$280,000
User Sector Pre-Investment Studies (Malaysia)	US \$100,000
User Sector Pre-Investment Studies (Thailand)	US \$150,000
Global Aerosols Project	<u>US \$350,000</u>
Total request	US \$1,220,000

Argentina: User-Sector Project Identification and Preparation (US \$100,000).

1. This project would set-up a local technical unit to co-ordinate and manage project identification and development activities. The technical unit staff will work with local enterprises and international consultants in preparing priority ODS phaseout projects for submission in 1994.

2. Institutional strengthening is to "strengthen a mechanism within the country to facilitate expeditious implementation of projects [and ensure] effective liaison. . . ." (UNEP/OzL.Pro/ExCom/7/30, page 14, paragraph 74) The Bank has clarified that the main purpose of the project is project co-ordination. The setting up of a local technical unit to co-ordinate projects and liaise with consultants is an institutional strengthening function.

3. "Requests for institutional strengthening are considered as special projects subject to approval by the Executive Committee on the basis of a written request submitted by the interested Party." (*Ibid.*)

China: Production Sector Pre-Investment Studies (US \$240,000).

4. This project would support the development of project proposals for the production of ODS substitute chemicals.

5. UNDP was allocated US \$70,000 for a survey and assessment of small CFC plant conversion possibilities. UNIDO also intends to utilize approximately US \$1.5 million in the

area of production of chemical substitutes per its three-year plan and budget submission. The conclusion of UNDP's assessment and UNIDO's future plans may have an impact of some proposals contemplated by these pre-investment studies.

China: User Sector Pre-Investment Studies (US \$280,000).

6. The objective of these studies is to develop 10-15 sub-projects for both the China ODS III and IV projects. Four of the five industrial user sectors will be addressed in these sub-projects.

7. US \$326,000 was approved for project preparation at the Executive Committee's ninth meeting. Slightly over 10 per cent of this amount (US \$35,372) was expended as at 31 March.

8. UNDP and UNIDO were allocated US \$100,000 and US \$150,000 for project preparation activities in China, respectively, at the last Committee meeting for several user sectors, also.

Malaysia: User Sector Pre-Investment Studies (US \$100,000).

9. The funds requested for this activity would update the country programme (US \$25,000); and conduct workshops for project preparation and identify and prepare project proposals (US \$75,000).

10. One of the three activities included in this request concern activities covered under country programme preparation which is a separate budget item in the Bank's work programme. Another activity concerns holding user seminars (workshops) to assist users in applying for projects.

11. It should be noted that the Government of Malaysia has already submitted its country programme and two investment projects without implementing agency assistance that were all approved by the Executive Committee.

12. Malaysia was allocated US \$322,520 for institutional strengthening in relation to projects on ODS reduction also at the last meeting of the Executive Committee. The country programme update will be supported by the ozone desk in the Department of Environment funded through institutional strengthening.

13. At its ninth meeting, the Executive Committee approved US \$28,000 for the preparation of projects in Malaysia. UNDP is also requesting US \$50,000 for project preparation in Malaysia at the tenth meeting.

Thailand: User Sector Pre-Investment Studies (US \$150,000).

14. These funds are intended to support three studies (as "project development activities") and the preparation of 15-25 sub-projects for the Thailand ODS II project. The studies address: 1) user identification and consumption figures, 2) a programme to encourage bilateral support, and 3) preparation of price projections.

15. US \$400,000 was allocated for institutional strengthening of Thailand's Ozone Layer Protection Unit at the ninth meeting. The unit is responsible, inter alia, for assistance in the development and implementation of phase-out activities and improve data collection, dissemination, and monitoring.

16. US \$190,000 was allocated for project preparation in the Bank's 1993 work programme for Thailand. Slightly under 20 per cent of this amount (US \$34,415) was expended as at 31 March. UNDP was allocated US \$50,000 for training government staff to perform such activities.

17. The user identification effort is distinguished from the ongoing country programme preparation since this project will focus on lower-volume users.

Global Aerosols Project (US \$350,000).

18. Global projects have been approved for four of the six user sectors. This project will study the aerosol industry in ten countries to determine means of making hydrocarbon aerosol propellants available by way of imports or local production. The project will result in an action plan for CFC-based aerosol phase-out. A three-day training programme will be held in six countries to promote conversion. Projects identified will be prepared and presented to the Committee for consideration. Reports on the six country training programmes will be submitted.

19. The Executive Committee has already provided US \$60,000 for UNDP to provide technical assistance in nine countries in updating aerosol demonstration materials. At its last meeting, the Committee approved US \$40,000 for UNEP to prepare training material for the aerosol sector. Some of these experiences and materials may be of use in this project.

Recommendations

20. The main thrust of the project Argentina User-Sector Project Identification and Preparation is essentially project co-ordination. As such, the project should be re-submitted as an institutional strengthening project with a written request submitted by the interested Party for its submission.

21. The China Production Sector Pre-Investment Studies should be approved for the US \$240,000 requested with the understanding that UNDP's studies and UNIDO's planned activities in the production sector are co-ordinated and a distribution of activities in the China production sector is presented in the agency's progress reports to the next meeting.

22. The China User Sector Pre-Investment Studies should be approved for the US \$280,000 requested with the understanding that other agencies' project preparation activities are taken into consideration, and a distribution of activities in the China user sector is presented in the agency's progress reports to the next meeting.

23. The Malaysia User Sector Pre-Investment Studies include both a country programme update and project preparation activities which should be separate budget items. The country programme should be approved for the US \$25,000 requested. The project should be approved for project preparation activities in the amount requested, (US \$75,000) with the understanding that other agencies' project preparation activities are taken into consideration, and a distribution of activities in the Malaysia user sectors is presented in the agency's progress reports to the next meeting.

24. The Thailand User Sector Pre-Investment Studies should be approved for the US \$150,000 requested with the understanding that other agencies' project preparation activities are taken into consideration, and a distribution of activities in the Thailand user sector is presented in the agency's progress reports to the next meeting.

25. The Global Aerosols Project should be approved for the amount requested, US \$350,000, with the understanding that the project is co-ordinated with other projects approved by the Executive Committee especially training material developed by UNEP and UNDP.

26. It is, therefore, recommended that:

a. The Executive Committee requests the Bank to resubmit the proposed activity, Argentina User Sector Project Identification and Preparation, as a request for institutional strengthening with a written request submitted by the interested Party for its submission.

b. The Committee approves the supplemental activities listed below as amendments to the World Bank's 1993 work programme and directs the Treasurer to transfer US \$1.12 million for the following activities:

Production Sector Pre-Investment Studies (China)	US \$240,000
User Sector Pre-Investment Studies (China)	US \$280,000
User Sector Pre-Investment Studies (Thailand)	US \$150,000
User Sector Pre-Investment Studies (Malaysia)	US \$ 75,000
Country Programme Update (Malaysia)	US \$ 25,000
Global Aerosols Project	<u>US \$350,000</u>

Total approvals as work programme amendments	US \$1,120,000
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WORLD BANK OZONE PROJECTS TRUST FUND

WORK PROGRAM AMENDMENTS

BANK-IMPLEMENTED MONTREAL PROTOCOL OPERATIONS

as of May 27, 1993

Global Environment Coordination Division, Environment Department

THE WORLD BANK

WORK PROGRAM AMENDMENTS

1. The Bank is requesting additions to its Work Program budget for project preparation for the following countries and amounts:

(i) Argentina: User-sector project identification and preparation (\$100,000)

During the reconnaissance mission to Argentina held in February, an agreement was reached with the Government to accelerate the development of project preparation in parallel with the Country Program work. The Government of Argentina confirms its intention in a letter to the Bank. The project preparation being requested will serve to set-up a local technical unit which will coordinate and manage project identification and development activities. The Technical Unit staff will work with local enterprises and international consultants in preparing priority ODS phaseout projects which would be presented to the Executive Committee in 1994. These funds will supplement resources which the Bank already holds for Argentina.

(ii) China: Production sector pre-investment studies (\$240,000)

China has a large number of CFC and halon production facilities and plans to also produce a substantial portion of its non-ODS substitutes as ODS production/consumption is phased out. The work to be carried out under this activity submitted for a Work Program amendment of US\$ 240,000 will support the development of project proposals to cover the principal chemicals being considered as non-ODS substitutes and will develop specific actions to initiate closure/conversion of existing CFC production plants. International experts and investment analysts will be used to support local agencies in the pre-investment studies which are to include conversion and/or closure for 3 CFC production plants, conversion of CFC to HCFC production, HFC-134a production plant, and others such as HFC-152a, HCFC-123, and HFC-134a compatible lubricant plant.

(iii) China: User sector pre-investment studies (\$280,00)

This work program will include the development of specific strategies for each consuming industry sectors based on the recently completed Country Program and an expanded list of sub-projects to be developed up to the investment stage for consideration in the Third and Fourth Subprojects. The objective is to develop about 10-15 sub-projects for the China ODS III Project and 15-20 sub-projects for the China ODS IV Project (will be part of CY94 Work Program). Sectors to be covered are household refrigeration (including the commercial and technical viability of using three refrigerants), foams (including an approach to develop sub-projects in new foam sub-

sectors), halons and aerosols (project based on dimethyl ether).

(iv) Malaysia: User sector pre-investment studies (\$100,000)

These funds will be used to provide assistance to the Department of Environment for the following activities: (1) update of Malaysia's Country program to reflect technological developments and current international trends, (2) prepare and deliver sub-sector project preparation workshops, and (3) undertake the identification and preparation of sub-projects which will form the second multicomponent ODS phaseout project.

(v) Thailand: User sector pre-investment studies (\$150,000)

These project preparation funds will support three project development activities and the preparation of 15-25 technologically sound and cost-effective ODS phaseout sub-projects (which will form Thailand ODS II Project) for Thailand, based on the strategies outlined in the Country Program. In order to further define priority sub-sectors and sub-projects, ensure bilateral participation and facilitate accurate incremental cost calculation, this project includes three preparatory activities, namely: (1) assessment of major future ODS consumers based on an analysis of 1992 ODS consumption data and future ODS demand considering impact of first multicomponent projects (Thailand ODS I Project) and activities by foreign-owned enterprises operating in Thailand to phaseout ODS; (2) development of a program to bring in active support by ICOLP, MITI and other bilaterals in project feasibility study preparations; and (3) preparation of price projections for main ODS and ODS substitutes for Thailand. On the basis of these preparatory activities, 15-25 priority sub-projects will be prepared and developed by Thailand's Department of Industrial Works for presentation to the Multilateral Fund through the Bank. This project preparation activity would be carried out over the next 12 months with sub-project presentation to the Executive Committee in 1994.

(vi) Global Aerosol Project (\$350,000)

This project is included as a work program amendment because it costs less than US \$500,000 (see attached Annex I).

ANNEX I

PROJECT COVER SHEET AND SUMMARY

REGIONS:	Global
PROJECT TITLE:	Multi-country Aerosol Project
SECTOR COVERED:	Aerosol
ODS CONSUMPTION IN SECTOR:	At least 25,000 tons CFC 12 per year
PROJECT DURATION:	18 months
PROJECT IMPACT:	Identification and Preparation of ODS Phaseout Projects in the Aerosol Sector
TOTAL PROJECT COST:	\$350,000
COORDINATING AGENCIES:	Local Ozone Liaison Offices
IMPLEMENTING AGENCY:	World Bank

PROJECT SUMMARY

There are several factors which impede elimination of CFCs in the aerosol sector. These factors arise from misconceptions about the use of hydrocarbon aerosol propellants (HAP) as an alternative propellant in developing countries. Among these misconceptions: (1) that adequate information on alternative propellant is widely and readily available, (2) that the conversion to HAP is so profitable that conversion would happen with little external stimulus or assistance, for all production volumes (in fact, savings often accrue to other sectors of the industry and not the filler). The proposed Multicountry Aerosol Project (the Project) will consist of a study of the aerosol industry in 10 countries that have significant consumption of CFC as aerosol propellant, in each case identifying means to make available HAP through local production or through imports. Also, working through the local Ozone liaison agency, the Project will assist in preparing an action plan to phase out CFC-based aerosols. Furthermore, the study in each country will evaluate the feasibility of introducing HAP propellants and the potential impacts on logistics and plant relocation. Based on this preliminary work, it is expected that 6 countries will be selected where the possibility exists to supply HAP to the local aerosol industry. A 3-day training program in each country (2 day seminar, 1 day hands-on workshop) will be used to promote conversion to HAP using, among others; material UNEP is developing; the Bank aerosol projects in China, Ecuador and Jordan; and aerosol phase out experience in Mexico. Local manufacturers will be made aware of need to change, told how to do so, and assisted in project preparation. Project identified in the course of this multicountry project will be further prepared and presented to the Multilateral Fund.

The Project is designed to promote CFC phase out on a commercial, cost effective basis in all 10 countries to be studied with particular attention to the six countries selected for more in-depth study. The modular design of the Project components, coupled with the information dissemination work of UNEP will lead to a well coordinated, cost effective program for phasing out CFCs in all aerosol applications in developing countries.

PROJECT OBJECTIVES

The project is designed to promote conversion from CFCs to HAPs in 10 countries, including providing technical assistance in four countries for which commercial solutions are expected without MPMF assistance and detailed project designs in six countries for which some subsequent MPMF assistance is expected.

1. SECTOR BACKGROUND

Technology is well established to eliminate use of ODS in aerosols. However, about 10% of CFC consumption worldwide is still in aerosol, representing over 25,000 tons per year. Where HAPs and technical and commercial information have been readily available, entrepreneurs have frequently converted from CFCs to HAPS often under market forces. This situation has led to the misconception that propellant conversions in aerosols were so profitable that all countries would convert without delay or without policy stimulus or financial assistance. This has proven to not be the case due principally to technical and information barriers, including lack of readily available technical and commercial information, and the fact that profits often do not accrue to the supplier of HAPs or the aerosol filler but are quickly passed on to the consumer. Thus there is a need for a technical package on commercial designs and supply of HAPs and an incentive framework to make the phase out take place in country specific conditions. There is little experience in translating conversion technology into reality. A model or several models (there will be several different in-country situations to deal with), in conjunction with high level technical support, is needed to generate projects to address the inaction in several countries.

Usually, there are financial savings involved when the propellant is converted from CFC to HAP, but often these savings go to a different entity from the one that incurs the expense of converting, and usually savings are quickly passed on to consumers. It is now understood that propellant savings are not profits, and thus it may be necessary to use a financial stimulus to promote conversions, given that the incremental costs are generally not fully covered by savings in the recurrent cost of propellant.

UNEP is planning regional training programs that will heighten awareness that aerosols can be converted now, and also develop a manual that presents the technologies that are needed to promote conversions in aerosols. The manual should be available by mid-1993, and will help resolve the lack of ready availability of information. This Project will use that experience as well as practical experience from Mexico, China, Ecuador and Jordan.

There are many possible propellants which aerosol manufacturers may use in place of CFCs (see 1991 UNEP "Technical Option Report on Aerosols, Sterilants, and Miscellaneous Uses and Carbon Tetrachloride"). It is expected, however, that only HAP will be widely used (as reflected by international experience), although in a few cases dimethyl ether may find some limited use. HAP may be purified from cuts of Liquefied Petroleum Gas (LPG) if these are of adequate purity, or they may be imported from a country that has a supply of adequate quality. Pure HAP are flammable substances that are also completely odorless, and they are therefore very expensive to transport and process given the safety risks. For this reason imports are used only if volume is small or if there is no adequate local feedstock.

There was a large reduction in use of CFCs in aerosols in late 1970's and 1980's as virtually all developed countries enacted regulations against their use. Because savings in propellant costs do not translate directly into profits, little was done in developing countries where market forces and environmental pressures did not generate action. In some developing countries, local entrepreneurs

introduced HAP (Argentina and Mexico in early 1970's were among the first), and where this has happened they have largely displaced CFCs because they are cheaper. This has not happened everywhere because the technology is not widely known, capital costs may be high depending on the raw material available, and safety and transport requirements must also be considered. Where HAP are not available it is a virtual certainty that CFC are still the principal propellant.

2. PROJECT DESCRIPTION

The Project will determine under what conditions HAP can be made available in 10 countries, and design and promote investment projects in six of these countries based on the HAP availability. When a few companies convert, then shortly after most other producers are likely to follow. Further, with availability of HAP, it will be possible to prohibit use of CFC in this sector in these countries without damaging the local aerosol industry. The Project would be executed in the following manner:

- (a) Ten selected countries would be visited to verify whether CFCs are widely used as aerosol propellants, and to undertake a preliminary study concerning supply of HAPs from local LPG and the broad outlines of a program of conversion of aerosol fillers to HAP from CFC. A partial list of countries to be considered include:

Central and South America:	Chile, Costa Rica, El Salvador, Guatemala
Europe and Central Asia:	Turkey, Romania
Middle East North Africa:	Egypt, Tunisia
Africa:	Kenya, Nigeria
Asia:	India, Pakistan, Philippines, Malaysia, Thailand

- (b) A Country Report would be prepared for those countries that participate in the Project. The Country Reports would provide giving the status in each country and the strategy each should adopt for phase out and give detailed information on technology and operational issues and project design possibilities. It is anticipated that this work will be sufficient to generate action in six of those countries to undertake further work without use of MPMF resources.
- (c) The remaining six countries will be the subject of detailed project preparation work. These six are expected to be situations where it appears possible to produce aerosol grade HAPs, or because local feedstocks don't exist or are unacceptable), it appears possible to establish a distributor using imported material. A 2 day Alternate Propellant seminar followed by a 1 day hands on workshop would be undertaken in each country selected. This seminar would:
- . be based on the UNEP manual and operational focus of Bank projects and experience from Mexico;
 - . confirm and/or promote a local producer (or distributor) of HAPs; and
 - . develop plant conversions to HAPs as projects for financing under national ODS action program of each country.
- (d) A project would be prepared for a local supplier of HAPs. Projects would also be

developed for about 20-30% of local aerosol fillers. A follow-up visit for additional preparation work would be undertaken to ensure that projects are ready for financing and implementation.

3. EXPECTED RESULTS

Each of the selected 10 countries from the above list consumes 100 or more tons per year of CFC in aerosols. The following would be the expected results:

- . 4 countries would convert on basis of availability of information and assistance being provided hereunder.
- . 6 countries will convert based on investment projects and programs developed for financing through the MPMF.

The cost per kilogram of ODS reduction will be determined after the Project is finished. It is expected that several investment projects will be generated by this effort and that project presentation to the Executive Committee of the Multilateral Fund would begin in early 1994.

4. PROJECT COSTS

4	two week preliminary survey trips	
	Travel expenses	\$30,000
	Consultant	\$40,000
3	two weeks seminar trips	
	Travel expenses	\$36,000
	Consultant	\$50,000
	Seminar expenses (6)	\$18,000
	Local Travel (participants)	\$30,000
6	two week project preparation trips	
	Travel expenses	\$48,000
	Consultant	\$48,000
	Project administration expenses	<u>\$20,000</u>
	Sub Total	\$320,000
	Contingencies (10%)	<u>\$30,000</u>
	Total	<u>\$350,000</u>

5. FINANCIAL AND ECONOMIC ANALYSIS

After the survey trips, as projects are developed their financial and economic analysis and incremental costs will be indicated in the project reports.

6. IMPLEMENTATION AND DISBURSEMENT SCHEDULE

The schedule for project development is given below:

Initial survey visits: August-October, 1993

Seminars/project preparation: October-December, 1993

Project Design and reports: February-April, 1994

Final project reports: May - July, 1994

Disbursements are expected to be 40% in CY93 and 60% in CY94.

7. PROJECT MANAGEMENT

Task management of this project would be assigned to Mr. Geno Nardini (World Bank OORG Aerosol Specialist) supported by Don Brown and the Bank's MP Operations Team. The OORG reviews for projects resulting from this effort would be carried out by Dr. Harry B. Mc Cain, Technical Director of Aeropress Corporation and President of the US-based National Aerosol Association. Close coordination with UNEP and Bank task managers will ensure early implementation and avoid overlap with other work.

8. REPORTING

The following reports will be prepared:

- . Interim report after the preliminary survey of the 10 countries;
- . Modular designs of the seminars
- . Draft reports on each of the six detailed country projects, including results of the workshops
- . Final reports on each of the six country projects after review by the country ODS agency.