

Document of
The World Bank

Report No. 14012-MA

MULTILATERAL FUND UNDER THE MONTREAL PROTOCOL
MEMORANDUM AND RECOMMENDATION
OF THE DIRECTOR
FOR COUNTRY DEPARTMENT I
OF THE
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE
REGIONAL VICE PRESIDENT, EAST ASIA AND PACIFIC REGION
ON A
PROPOSED OZONE PROJECTS TRUST FUND GRANT
IN THE AMOUNT EQUIVALENT TO US\$20.0 MILLION
TO MALAYSIA
FOR A
MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT

AUGUST 11, 1995

Agriculture and Environment Division
Country Department I
East Asia and Pacific Region

CURRENCY EQUIVALENTS

(As of December 1994)

Currency Unit = Ringit (R)

US\$0.4 = R1.00

US\$1.00 = R2.5

ABBREVIATIONS AND ACRONYMS

CP	Country Program (for ODS Phase-out)
CETEC	Center for Environmental Technologies
DOE	Department of Environment, Ministry of Science, Technology and Environment
EA	Environmental Assessment
EPU	Economic Planning Unit of the Prime Minister's Office
MAC	Mobile Air-conditioning
MF	Multilateral Fund of the Montreal Protocol
MP	Montreal Protocol
MT	Metric Tons
MFEC	Multilateral Fund Executive Committee
ODS	Ozone Depleting Substances, or Controlled Substances as defined by the Montreal Protocol
ODP	Ozone Depleting Potential (CFC 11 = 1.0)
OORG	Ozone Operations Resource Group (External Technical Reviews)
OTF	Ozone Project Trust Fund of the World Bank for the Substances as defined by the Montreal Protocol
UNDP	United Nations Development Program
UNEP	United Nations Environment Program

FISCAL YEAR (MALAYSIA)

JANUARY 1 - DECEMBER 31

MALAYSIA

**MONTREAL PROTOCOL OZONE DEPLETING
SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

PROJECT AND GRANT SUMMARY

<u>Project Description</u>	The Project would assist Malaysia to implement an accelerated ODS phase-out program by providing financing for priority subprojects.	
<u>Executing Agency</u>	Department of Environment (DOE)	
<u>Local Implementing Agent</u>	Center for Environmental Technologies (CETEC)	
<u>Beneficiaries</u>	Local Enterprises introducing ODS reducing technologies;	
<u>Grant Amount</u>	US\$ 20.0 million equivalent	
<u>Terms</u>	Grant	
<u>Re-lending Terms</u>	Grant	
<u>Project Cost Summary</u>	<u>Component</u>	<u>US\$ Million</u>
	Grants for ODS Investment Subprojects	20.0
	Commercial Loans/or Enterprise Own Funds (est.)	5.0
	TOTAL	25.0
<u>Net Present Value</u>	N/A	
<u>Staff Appraisal Report</u>	N/A	

**MEMORANDUM AND RECOMMENDATION OF THE DIRECTOR
COUNTRY DEPARTMENT 1
TO THE REGIONAL VICE PRESIDENT
EAST ASIA AND PACIFIC REGION**

1. I submit for your approval the following memorandum and recommendation on a proposed OZONE PROJECTS TRUST FUND ^{1/} grant to Malaysia for the equivalent of US\$20.0 million to help finance priority subprojects for the phase-out of ozone depleting substances.

2. Background. Malaysia ratified the Montreal Protocol (MP) on Substances that Deplete the Ozone Layer in November 1989 and qualifies for assistance from the Multilateral Fund for Implementation (MF) of the Montreal Protocol, which was established in the London Amendments to the MP. As a country operating under Article V of the MP, Malaysia is eligible for grants from OTF, which the Bank administers with funds provided by MF to cover incremental costs of activities to phase out the production and consumption of ozone depleting substances (ODS). MP requires industrialized countries to halt production and consumption of most ODS by the end of 1995. Article V countries which historically consumed small quantities of ODS, are allowed to phase out more gradually and must completely eliminate CFCs and Halons controlled under the MP by 2010.

3. Based on a National Study on Ozone Depleting Substances (ODS) conducted with the assistance of the Canadian International Development Agency (CIDA), the Government of Malaysia completed its Country Program (CP) in November of 1991, which was one of the first to be approved by the MFEC. Malaysia consumed about 3896 MT of ODP weighted ^{2/} ODS in 1993. The breakdown of ODS by user sector is as follows: refrigeration and air conditioning 51.9% (including mobile air conditioning 14.7%, residential and small commercial air conditioning 29.3%, refrigeration 7.9%), solvent cleaning 35.2%, aerosols 2.3%, and fire fighting 1%.

4. Malaysia has voluntarily committed to a complete phase-out of the use of CFCs and Halons by the end of the year 2000. In June 1994 Malaysia established its own Montreal Protocol unit in the Department of Environment (DOE) to oversee the national phase-out effort funded under the UNDP implemented Institutional Strengthening Project. To support the implementation of its phase-out under the Bank's workprogram, the Government of Malaysia through DOE appointed the Center for Environmental Technologies (CETEC) as an Implementing Agent for ODS phase-out projects. CETEC is a non-governmental organization

^{1/} The Ozone Projects Trust Fund (OTF) has been established under the Interim Multilateral Fund for the Implementation of the Montreal Protocol. Its purpose is to fund activities which enable developing countries who are signatories of the Protocol, to comply with their obligations under the Protocol. The OTF is administered by the World Bank.

^{2/} Ozone Depleting Potential (ODP) is a measure to compare the depleting potential of various ozone depleting substance (ODS), e.g. CFC 11 has an ODP of 1.

originally formed by an association of professionals in the field of engineering and environment. So far CETEC has undertaken two assignments through which it gained experience in the field of ODS phase-out: in 1994, it prepared the update of the CP for the Government and it worked as local counterpart with international consultants in the identification and preparation of subprojects. The Economic Planning Unit (EPU) of the Prime Minister's Office has been involved in the national ODS phase-out program since 1992 and signed as representative of the Government the Grant Agreement with the Bank for an ODS Recycling Project.

5. In terms of Bank implemented Montreal Protocol projects, the Multilateral Fund Executive Committee (MFEC) approved US\$1.63 million in November of 1992 for a ODS Recycling Project which has a Mobile Air Conditioning and Halon Recycling Component. In November 1993 it approved another \$100,000 for the update of the Country Program and for preparation of about 15 investment subprojects. In December 1994, the MFEC approved about \$2 million for three subprojects in the aerosol and domestic refrigeration sectors. In total the MFEC had, as of 1994, approved \$15.0 million to support about 52 phase-out related activities for implementation by UNDP, UNEP, and the Bank.

6. The Bank prepared and reviewed an Executive Project Summary for an ODS phase-out investment project as early as 1991. However, the implementation of the ODS Recycling Project took priority in the following years and it was only in 1993, after the concept of the Umbrella Agreement had become available, that active preparation of an ODS investment project was resumed and that DOE formally requested the Bank to be the implementing agency for such project.

7. Project Objectives and Approach. The overall objective of the project is to assist the Government in carrying out its Country Program to phase out ODS by implementing cost-effective investment subprojects which reduce consumption of ODS in Malaysia.

8. The multi-sector project will be executed under an umbrella grant agreement to be signed between the Government (represented by EPU and the Bank). This approach has been chosen in order to facilitate processing of multiple subprojects under one single agreement. The umbrella agreement will spell out the flow of funds from the Bank's OTF through the Government of Malaysia to approved subprojects. Funding of subprojects under the umbrella agreement will be subject to prior approval of each subproject by MFEC and the Bank (or by the Bank only in case of subprojects below US\$500,000) and transfer of approved funds from the MFEC to the Bank's OTF.

9. The project will be implemented through the Center for Environmental Technologies (CETEC) as the local implementing agent under supervision of DOE as the responsible government agency. CETEC has been selected in accordance with Bank guidelines. DOE will enter into a memorandum of agreement with CETEC which would spell out the respective roles and responsibilities of CETEC and DOE.

10. Project Description. The Project will support about 30 ODS phase-out subprojects to be implemented by ODS consuming enterprises during the next three years and to be funded under this umbrella project. It will cover major ODS use sectors in Malaysia including refrigeration, air-conditioning, foams, aerosols, solvents, and halon. The first three already approved subprojects will result in the phase-out of about 339 MT of ODP annually. A list of a first group of approved subprojects is attached in Annex I, and a description of these projects can be found in Annex II. A timetable with key project processing events is given in Schedule C. The project is expected to be completed by December 31, 1998.

11. Project Costs and Financing. Total cost of all subprojects will amount to about US\$25 million of which an estimated US\$16.95 million represent incremental costs eligible for grant funding. The total grant will amount to an estimated US\$20 million including a 3% financial agent fee and 15% for contingencies. In accordance with MP guidelines, retroactive financing is allowed for any expenditure incurred after the date of ratification of the Montreal Protocol by Malaysia. A break down of costs for approved subprojects and a financing plan can be found in Schedule A. A disbursement schedule is presented in Schedule B.

PROJECT COST

	Project Costs (US\$ Million)			Proposed OTF Grant b/
	<u>Investment Costs</u>	<u>Net Recurring Costs (4 Yrs)</u>	<u>Total Eligible Incremental Cost a/</u>	
Approved Subprojects:	2.2	0.8	1.7	2.0
Subprojects for Future Approval (est.)	19.8	2.2	15.2	18.0
TOTAL PROJECT	22.0	3.0	16.9	20.0

a/ Eligible incremental cost = incremental cost x share of local ownership.

b/ Includes eligible incremental cost, 15% contingency for pre-appraised and 3% fee for local implementing agent.

12. Project Implementation. DOE will have responsibility for the overall ODS phase-out program and will monitor progress of project implementation. DOE will review and endorse each subproject prior to submission to the MFEC for funding to ensure that cost-effective technologies will be applied and that the subproject conforms to Country Program priorities. CETEC, the local implementing agent, will be responsible for implementation of the

project, including the preparation of subproject appraisal reports, the verification of disbursement requests by subproject proponents, and supervision of subproject implementation. For its services, CETEC will receive a fee of 3% of the subgrant amounts, to be disbursed as follows: one third (equivalent to 1% of the appraised subgrant amount excluding contingencies) following the approval of the subproject by the MFEC (or the Bank in case of subprojects of less than US\$500,000), and two thirds (equivalent of 2% of actually disbursed amounts) upon disbursement of the subgrants to the subprojects. CETEC would be guided by subproject eligibility, appraisal and financing criteria for Montreal Protocol projects (summarized in Annex V). CETEC will draft detailed Operating Policy Guidelines (OPGs) acceptable to the Bank (see Annex III) for adoption by DOE which will be a condition of grant effectiveness.

13. Subproject Proponents will be responsible for the implementation of the subproject. Their obligations will be spelled out in a sub-grant agreement to be signed between the subproject proponent and DOE. A model sub-grant agreement acceptable to the Bank would be prepared by CETEC as part of the OPGs.

14. As Trustee of the OTF, the Bank will be responsible for supervising all aspects of project implementation. It will review each subproject appraisal report prepared by CETEC to ensure compliance with MFEC guidelines prior to seeking the latter's approval (i.e. there is no free limit as required under the OTF agreement with the MFEC).

15. Flow of Funds. Funds would flow from the Bank's OTF to a Special Account of US\$1.5 million which DOE would establish in its own name in the Central Bank of Malaysia, following Bank Guidelines. From there, funds would be drawn down by DOE for payments directly to the subprojects, subject to verification by CETEC. DOE will also be responsible for submitting the applications for withdrawal and replenishment of the Special Account to the Bank. This account will be used for both local and foreign expenditures. Larger expenditures, exceeding 20% of the special account, can be submitted by DOE to the Bank for direct payment to the subproject or its supplier.

16. Interest income earned on the outstanding balance of the Special Account would be used by DOE for purposes, such as Montreal Protocol related training and participation in international conferences to update DOE's technical know how.

17. Reporting and Monitoring. The DOE would submit semi-annual progress reports to the Bank and to EPU to be prepared by CETEC. DOE will also provide for the preparation of an annual audit report by an independent auditor acceptable to the Bank. For the purposes of this Project, the Office of the Auditor General is acceptable to the Bank. DOE will submit monthly financial statements on the Special Account to the Bank with copy to EPU and CETEC. Finally, DOE and the Bank will carry out joint annual reviews to monitor progress in project implementation.

18. Procurement and Disbursement. Procurement of goods, works and services under this grant will be undertaken by the subproject proponent in accordance with Bank

Procurement Procedures. (Detailed procurement guidelines are attached in Annex IV.) CETEC will satisfy itself that the goods, works and services to be purchased are for the investment subprojects and are reasonably priced, by ensuring that the grant recipient has followed the guidelines agreed under this Project. Whenever consultants will be required, they will be selected in accordance with the Guidelines for the Use of Consultants. Disbursement will follow Bank Guidelines. (Detailed disbursement guidelines for this project are attached in Annex IV).

19. Lessons from Previous Bank Experience. OTF Projects are being developed simultaneously in Mexico, Venezuela, China, Thailand, Philippines, Turkey, and other countries. An umbrella agreement was recently signed with Thailand and Indonesia but none of the projects has been completed so far. However, based on the Bank's early experience with MP operations, which is documented in the Implementation Performance Review (December 1994), it is clear that no single aspect of project implementation is more important than the establishment of local capacity to deal with ODS phase-out activities. This typically required the selection of a local implementing agent as operating unit in addition to strengthening an Ozone Desk in the key government agency as coordinating body. Also, given that the MP program is being implemented in a dynamic and fast changing technical environment, it is necessary that the relevant agencies remain responsive to new situations and flexible in adjusting procedures to new circumstances.

20. Project Sustainability. The Project will assist the Government in establishing an efficient mechanism for developing and funding subprojects under the ODS phase-out program. In order to achieve a sustainable and cost-effective phase out of ODS with a broad coverage of the various ODS consuming sectors, the Government has adopted a strategy which combines awareness programs, technical and financial assistance to enterprise specific phase out programs, and regulatory measures, such as the requirement of an 'approval permit' for the import of ODS. In addition, given Malaysia's policy of an open market economy, it can be expected that international market forces, in particular rising prices for ODS and falling prices for ODS substitutes will act as an additional incentive for industry to accelerate ODS phase-out.

21. Rationale for Use of Ozone Trust Fund. The projects will help the Government implement an accelerated ODS phase-out program. The MFEC has approved the use of grants from the Ozone Trust Fund for this purpose. The proposed Project is consistent with the Implementation Guidelines and Criteria for OTF funding established by the MFEC, for which the Bank is an implementing agency.

22. Environmental Considerations. The overall objective of this project is environmental. This Project is expected to result in a significant reduction in ODS consumption in the country through introduction of non-ODS technology and initiation of recycling activities. However, the change to non-ODS technologies or substitution of ODS with other chemicals may involve other environmental risks, such as atmospheric releases of substitute chemicals, in particular hydrocarbons, and water pollution, particularly from use of aqueous base solvents. Together with the appraisal report, CETEC will submit a certification, to be

issued by DOE, that the subproject has complied with the Environment Quality Act of 1974 and its regulations.

23. Project Benefits. The subprojects already approved under this Project will contribute to annual savings of 339 MT ODP, or approximately 10% of Malaysia's ODS use in 1993. Assuming an average ODS phase-out of 25 MT ODP for the estimated 27 additional subprojects, the total ODS reduction under the project would amount to 1014 MT ODP or about 26% of 1993 total ODP consumption.

24. Project Risks. Institutional weakness of local agencies could limit the ability to effectively implement and monitor the Project in a timely manner. In the context of the MOA, CETEC will prepare a staffing plan to ensure the necessary technical capabilities. DOE will maintain its Montreal Protocol unit during project implementation.

25. Agreed Actions. Agreement has been reached with Government on the following points, which would constitute conditions of grant effectiveness:

- (i) The Government, represented by DOE, has entered into a Memorandum of Agreement with CETEC acceptable to the Bank that would include, *inter alia*, a staffing plan for CETEC;
- (ii) CETEC has prepared and DOE has adopted Operating Policy Guidelines acceptable to the Bank, including a subgrant agreement format.

Recommendation

26. I am satisfied that the proposed grant would comply with the relevant provisions of the Ozone Projects Trust Fund in Resolution 9-15 of the Executive Directors and I recommend that the Regional Vice President approve it.

Callisto Madavo
Director
Country Department 1
East Asia and Pacific Region

Washington, D.C.
August 11, 1995
Attachments

MALAYSIA

**MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

Schedule A

PROJECT COST AND FINANCING PLAN

**LIST OF SUBPROJECTS
PROPOSED COSTS**

Company	End Use	Subproject Costs (US\$ Million)			Local Ownership %	Eligible Incremental Costs ^{1/}	Proposed OTF Grant (US\$ m) ^{2/}	
		Investment Cost	Net Recurring Costs (4 Yrs) ^{3/}	Total Incremental				
Approved Subprojects								
1.	Matsushita Elec. Co.	Refrigerators	1.06	0.83	1.89	56.9	1.08	1.28
2.	Kontrak Mfg. Services	Aerosols	1.03	0	1.03	51	0.52	0.62
3.	Argon Malaysia Co.	Aerosols	0.11	0	0.11	100	0.11	0.12
Subtotal Approved			2.20	0.83	3.03		1.71	2.03
Future Subprojects			19.80	2.17	21.97		15.24	17.97
TOTAL			22.00	3.00	25.00		16.95	20.00

^{1/} Eligible Incremental Cost equal incremental costs multiplied by percent local ownership.

^{2/} Grant amount equals incremental costs multiplied by percent of local ownership. Includes contingencies of 15% for preappraised projects and 3% local implementing agent fee.

^{3/} Net present value (NPV) of first four years of operating costs/savings discounted at 10%. Negative numbers indicate net operating savings.

MALAYSIA

**MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

Schedule A

PROJECT COST AND FINANCING PLAN

FINANCING PLAN

Approved Subprojects	OTF Grant	Commercial Loans/or Enterprise Own Funds	Total
- Matsushita Electrical Co., M Bhd	1.28	0.61	1.89
- Kontrak Manufacturing Serv.	0.62	0.41	1.03
- Argon Aerosol Co.	0.13	0.0	0.13
Identified and Proposed Future Subprojects (estimated)	17.98	3.98	21.95
TOTAL	20.00	5.00	25.00

**MALAYSIA
MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

Schedule B

Summary of Proposed Procurement Arrangements

Total procurement under the grant will amount to US\$20 million for about 30 subprojects whose procurement will be administered following ICB or the procurement practices of private industry in Malaysia which the Bank has examined and found acceptable, consisting at a minimum of the following:

Goods and Works

- (i) contracts over US\$ 2 million equivalent (excluding proprietary packages) would be procured under ICB procedures;

For contracts below the ICB threshold, procurement would follow the procurement practices of private industry in Malaysia which the Bank has examined and found acceptable, consisting at a minimum of the following:

- (ii) contracts between US\$200,000 and US\$2 million equivalent would be procured on the basis of comparison of price quotations solicited from at least three qualified suppliers from at least two countries; and
- (iii) contracts below US\$200,000 would be procured on the basis of comparison of price quotations solicited from at least three qualified suppliers.
- (iv) goods which are (a) of a proprietary nature, (b) must be purchased from the original supplier to be compatible with existing equipment, or (c) must be procured from a particular supplier as a condition of a performance guarantee, may be provided directly from the supplier in accordance with procedures acceptable to the Bank (Direct Contracting).

Consultants

- (v) Contracting of Consultants shall be engaged on the basis of the "Guidelines for the Use of Consultants by World Bank Borrowers and the World Bank as Executing Agency" (August 1981).

Prior Review

Prior review is required with respect to each contract:

- (i) over US\$2 million;
- (ii) for hiring of individual consultants, if the contract price exceeds US\$50,000, and for hiring of consulting firms, if the contract price exceeds US\$100,000.
- (iii) for goods procured under Direct Contracting.

**MALAYSIA
MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

Schedule B

Withdrawal of the Proceeds of the OTF Grant

The table below sets forth the Categories of items to be financed out of the proceeds of the OTF Grant, the allocation of the amounts of the OTF Grant to each Category and the percentage of expenditures for items so to be financed in each Category:

Category	Amount of the OTF Grant Allocated (Expressed in US Dollar Equivalent)	% of Expenditures to be Financed
(1) Goods, Works, and Services Financed under Subgrants	19,417,000	100%
(2) Agent Fees	583,000	100%
TOTAL	20,000,000	100%

Disbursement Table

	Disbursements (US\$ Thousand)			
	CY 1995	CY 1996	CY 1997	CY 1998
Annual	750	5,000	10,000	4,250
Cumulative	750	5,750	15,750	20,000
Percentage: Cumulative	4%	29%	79%	100%

MALAYSIA

**MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

Schedule C

Timetable of Key Project Processing Events

	Event	Date	Other
a)	Preparation (Time Taken)		18 months
b)	Prepared by	DOE with Bank Assistance	
c)	First Presentation to the Bank	08/14/93	
d)	Departure of Bank Mission	09/15/94	
e)	Date for Negotiations	05/05/95	
f)	Planned Date of Effectiveness	09/30/95	
g)	List of Relevant PCR's and PPAR's	Not Applicable	

This report is based on the findings of a World Bank mission which visited Malaysia in September 1994. The mission included Messrs. K. von Ritter (Mission Leader), P. Linquiti and A. Karmali (Consultants). Peer reviewers were Paul Martin (EA3EN) and Ms. Jessica Poppele (ENVGC). The document was cleared by Mr. Jeffrey Gutman (Chief, EA1AE), and Mr. Callisto E. Madavo (Director EA1).

MALAYSIA
MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT

Table of Contents of Technical Annexes

Annex I	List of Subprojects: Summary of ODS Reduction
Annex II	Description of Approved Subprojects
Annex III	Processing Steps for Subproject Proposals
Annex IV	Procurement and Disbursement Arrangements
Annex V	Guidelines for Subproject Eligibility, Grant Funding, and Preparation of Appraisal Reports

**MALAYSIA: MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

ANNEX I: LIST OF SUBPROJECTS
ESTIMATED ODS REDUCTION SUMMARY

		End Use	ODS Consumption in 1991 (MT)	ODS Used (type)	ODS Reduction (ODP MT/year)	Cost Effectiveness \$/kg ODP/year
Approved Subprojects:						
1.	Matsushita	Refrigeration	80.6 18.0 11.4	CFC - 11 CFC - 12 1,1,1 TCE	101	N.C
2.	Kontrak	Aerosols	200.0		200	0.63
3.	Argon	Aerosols	38.0		38	0.67
Subtotal					339	
Future Subprojects (est):					675	
GRAND TOTAL					1014	

**MALAYSIA: MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

ANNEX II: DESCRIPTION OF APPROVED SUBPROJECTS

1. Matsushita Electric Co., (M) Bhd.

This subproject at Matsushita Electric Co. (MELCOM) is designed to phase out of CFC-11, CFC-12 and 1,1,1 TCE in manufacturing household refrigerators. The subproject has a total cost of US\$1.89 million and a grant of US\$ 1.28 million was approved by MFEC in December 1994. It consists of three phases: substituting HCFC-141b for CFC-11, eliminating 1,1,1 TCE as the solvent cleaner, and substituting HFC-134a for CFC-12 refrigerant. The enterprise is 56.9% Malaysian owned.

2. Kontrak Manufacturing Services, Sdn. Bhd.

This subproject will phase out 100 MT of CFC 11/12 by converting Kontrak's aerosol filler lines from CFC propellant to hydrocarbon propellants and an additional 100 MT by servicing smaller CFC propellant through a second filler line in an effort to provide those smaller users with a safe and cost-effective source of hydrocarbon propellants (HAPS). The subproject will assist KMS in the purchase of filling equipment, storage tanks, deodorizing columns for gas purification, and safety equipment. The total subproject cost is US\$1.03 million and a grant of US\$618,000 was approved by the MFEC in December 1994. The enterprise is 51% Malaysian owned.

3. Argon Malaysia Co.

This subproject will phase out 38 MT of CFC by converting Argon's aerosol filler lines from CFC propellant to hydrocarbon propellants. The subproject will assist Argon in the purchase of filling equipment and safety equipment. The total subproject cost is US\$131,200 and a grant fund for an equal amount was approved by the MFEC in December 1994. The enterprise is 100% Malaysian owned.

**MALAYSIA: MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

ANNEX III: PROCESSING STEPS FOR SUBPROJECT PROPOSALS

The following is a summary of key processing steps subprojects have to follow when requesting OTF funding under this Project. [CETEC will elaborate these steps into detailed Operating Policy Guidelines acceptable to the Bank and adopted by DOE].

- a. Subproject Identification: DOE, CETEC, and interested enterprises are entitled to identify possible ODS phase-out subprojects.
- b. Subproject preparation: subproject proponents are responsible for preparing the subproject proposals, but may request assistance from CETEC and DOE.
- c. DOE endorsement of proposal and initial OORG consultation: DOE will endorse each subproject prior to appraisal to ensure that the subproject proposal conforms to priorities established under the Country Program. DOE may choose to submit copies of the subproject proposals to the external experts (OORG members) to obtain advice and guidance on the choice of technology and project design, in line with sound international practice, in order to facilitate the preparation of the proposal. A list of the reviewers would be available through the World Bank.
- d. Financing arrangements: - in case of subprojects, where the OTF grant covers only part of the total project costs, subproject proponent will have to provide a financing plan (using own resources or commercial loans) for the uncovered balance by the time of appraisal.
- e. Environmental clearance: the subproject proponent will obtain the environmental clearances for the subproject required under national laws and regulations by the time of appraisal.
- f. Subproject appraisal: CETEC will appraise subprojects based on Montreal Protocol and Bank guidelines summarized in Annex V. CETEC would prepare appraisal summaries and reports in a format acceptable to the Bank.
- g. DOE endorsement of Appraisal: DOE will endorse each appraisal summary and report received from CETEC before submitting it to the Bank for technical review and approval by the MFEC.

- h. Technical review and Bank endorsement of appraisal: The Bank will review each appraisal report prepared by CETEC, oversee the technical reviews of subproject proposals by external reviewers and ensure that subprojects are consistent with MFEC guidelines (no free limit in accordance with MFEC guidelines). The technical review should be communicated in an instructive and clear manner to enable the subproject proponents to respond effectively to the recommendations. Once endorsed, the Bank will submit subproject proposals for over US\$500,000 to the MFEC for approval of funding.
- i. Subproject approval: For subprojects over US\$500,000, MFEC approval is required for each project. Subprojects of less than US\$500,000 can be approved by the Bank under conditions and rules established by the MFEC.
- j. Subproject Implementation: Once the subproject has been approved, the subproject proponent will be responsible for implementation of the subproject. For that purpose, it will sign a sub-grant agreement with DOE. The agreement will spell out the responsibilities of the subproject proponent and its commitment to undertake the necessary activities agreed upon in the subproject proposal in order to achieve the intended ODS phase-out.
- k. Procurement: Procurement of goods, works and services under this project will be undertaken by the subproject proponent in accordance with agreed procurement guidelines under this project which are spelled out in detail in Annex IV. CETEC will satisfy itself that subprojects follow the agreed procurement guidelines.
- l. Disbursement of Subgrant: Subprojects would submit requests for payments under this project to CETEC. CETEC will verify the eligibility and the amount of the requested payment and prepare a notification to DOE endorsing the release of funds to the subproject (see Annex IV).

- m. Disbursement of Operating Costs: The following procedure may be considered for disbursement of subgrants for eligible incremental operating costs: after about one year of operation, the enterprise will provide documentation confirming the estimate of annual incremental operating costs on which the subgrant approval was based. DOE can then disburse the subgrant amount allocated for operating costs in one or several tranches up to the ceiling established in the subgrant agreement. Under certain circumstances, typically for large projects (over US\$0.5 million) with a large share (proposed minimum threshold: over 50%) of grant funding for operating costs (as opposed to investment costs), the appraisal report would specify a disbursement plan for the operating costs in two or more tranches. Release of the tranches would typically be based on proof of actual operating costs and receipt of a progress report satisfactory to CETEC and the DOE.
- n. Progress reports: Subproject proponents will be responsible for preparing progress reports and submitting them to CETEC (with copy to DOE). As a minimum, the subproject proponent would submit one subproject progress report at the time when the proposed investment activities have been implemented and the new installations are operating. In cases where multiple disbursement tranches have been agreed, the subproject proponent would submit one progress report prior to each tranche. The final subproject progress report has to be acceptable to DOE and the Bank.
- o. Subproject Supervision: CETEC will have prime responsibility for supervising implementation of subprojects until its completion. Even after the subgrant has been fully disbursed, CETEC will review and approve the progress reports submitted by the subproject proponents and verify them. CETEC's responsibility for subproject supervision ends after full disbursement and the approval of the final subproject progress report acceptable to DOE and the Bank.
- p. Subproject Monitoring: DOE will supervise the progress of MP funded subprojects and CETEC's operations in fulfillment of its overall responsibility for the implementation of the MP ODS phase-out Country Program.
- q. Auditing and Reporting: The DOE would submit semi-annual progress reports to the Bank and to EPU to be prepared by CETEC. DOE will also provide for the preparation of an annual audit report by an independent auditor acceptable to the Bank. Finally, DOE will submit monthly financial statements on the Special Account to the Bank with copy to EPU and CETEC.

**MALAYSIA: MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

ANNEX IV: PROCUREMENT AND DISBURSEMENT PROCEDURES

A. Procurement

1. Procurement of goods, works and services under this project will be undertaken by the subproject proponent in accordance with Bank Procurement Guidelines (1995). Consultants will be selected in accordance with the Guidelines for the Use of Consultants. For International Competitive Bidding (ICB), documents will be prepared following the Bank Standard Bidding Documents, and domestic preference for goods manufactured in Malaysia will apply according to procurement guidelines of the Bank.

2. The CETEC will satisfy itself that the goods, works, and services to be purchased are for the investment subprojects and are reasonably priced, by ensuring that the grant recipient has followed efficient and economic procurement practices in accordance with those of the minimum thresholds agreed (see following list):

(a) For Procurement the following procedures would apply:

Goods and Works

Contracts over US\$2 million equivalent (excluding proprietary packages) would be procured under ICB procedures. For contracts below the ICB threshold, procurement would follow the procurement practices of private industry in Malaysia which the Bank has examined and found acceptable, consisting at a minimum of the following:

- (i) contracts between US\$200,000 and US\$2 million equivalent would be procured on the basis of comparison of price quotations solicited from at least three qualified suppliers from at least two countries; and
- (ii) contracts below US\$200,000 would be procured on the basis of comparison of price quotations solicited from at least three qualified suppliers.

Goods which are (a) of a proprietary nature, (b) must be purchased from the original supplier to be compatible with existing equipment, or (c) must be procured from a particular supplier as a condition of a performance guarantee, may be provided directly from the supplier in accordance with procedures acceptable to the Bank (Direct Contracting).

Consultants

Contracting of Consultants shall be engaged on the basis of the "Guidelines for the Use of Consultants by World Bank Borrowers and the World Bank as Executing Agency" (August 1981).

b) Prior Review

Prior review is required with respect to each contract:

- (i) over US\$2 million;
- (ii) for hiring of individual consultants, if the contract price exceeds US\$50,000, and for hiring of consulting firms, if the contract price exceeds US\$100,000.
- (iii) for goods procured under Direct Contracting. The appraisal report would include the name of the supplier, the type, specifications and estimated cost of the goods and the justification for procuring such goods through Direct Contracting. Review of the appraisal report by the Bank would be considered "prior review" in these cases.

B. Disbursement

3. Project funds are expected to be fully disbursed by 1998 according to the disbursement schedule in Schedule B. Closing date for the project is June 30, 1999. A Special Account totaling US\$1,500,000 in the name of DOE would be opened in the Central Bank to facilitate disbursements. This account should be used for all local and foreign expenditures. However, larger expenditures, exceeding 20% of the special account, can be submitted by DOE to the Bank for direct payment to the subproject or its supplier. The following disbursement procedures will apply:

(i) Between Bank and the Government of Malaysia

Disbursement will follow the procedures given in the Disbursement Handbook published by the Bank in 1992, and in the Disbursement Letter which will be issued after the Grant has been signed. Once the Grant Agreement has been signed and has become effective, and after receipt of an initial withdrawal application from DOE, the Bank will make an initial deposits of up to US\$1.5 million into the Special Account. DOE will be responsible for submitting the applications for withdrawal and replenishment to the Bank. Replenishment applications would be submitted by DOE on a monthly basis or whenever the withdrawn amount exceeded 20% whichever occurred first. Disbursements would be made against

Statement of Expenditures (SOEs) for contracts for (a) goods and works valued below US\$2 million equivalent, (b) consulting firms valued below US\$100,000 equivalent, and (c) individual consultants valued below US\$50,000 equivalent. All other disbursements will be made against full documentation. Supporting documents for SOEs including contracts, procurement documentation, and evidence of payment should be kept in a central location for examination by independent auditors and Bank staff during supervision missions. For larger disbursements exceeding 20% of the **Special Account**, DOE can submit disbursement requests directly to the Bank for payment to the subproject or a supplier.

(ii) Between Government of Malaysia and Subproject

Subproject proponents would submit requests for payments under this project to CETEC. CETEC will verify the eligibility and the amount of the requested payment and prepare a notification to DOE endorsing the release of funds to the subproject. DOE will disburse from the Special Account directly to the subproject (in case of reimbursement of actual expenses incurred by the subproject) or to a supplier (in case of submission of an invoice which has not yet been paid for by the subproject).

Up to US\$2 million per contract, the Government will disburse to the subproject proponent for eligible expenses without prior review by the Bank (see procurement guidelines).

Disbursement of Operating Costs: Under certain circumstances, typically for large projects (over US\$0.5 million) with a large share (proposed minimum threshold: over 50%) of grant funding for operating costs (as opposed to investment costs), the appraisal report would specify a disbursement plan for the operating costs in two or more tranches. Release of the tranches would typically be based on proof of actual operating costs and receipt of a progress report satisfactory to CETEC and the DOE. (See also Annex III, para m.)

(iii) Interest Earnings on Special Account

Interest income earned on the outstanding balance of the Special Account would be used by DOE for purposes, such as Montreal Protocol related training and participation in international conferences to update DOE's technical know how.

**MALAYSIA: MONTREAL PROTOCOL OZONE DEPLETING SUBSTANCES
PHASE-OUT INVESTMENT PROJECT**

**ANNEX V: GUIDELINES FOR SUBPROJECT ELIGIBILITY, GRANT FUNDING,
AND PREPARATION OF APPRAISAL REPORTS**

The following is a summary of guidelines for subproject eligibility, grant funding and appraisal reports of subprojects requesting funding from the Ozone Trust Fund; these guidelines are derived from Guidelines issued by the Multilateral Fund Executive Committee and by the Bank and are subject to changes from time to time.

A. Subproject Eligibility

1. Subprojects should be on priority list included in the Country Program or should be identified by DOE as essential to achieve the objectives of ODS phase-out in Malaysia. Subprojects should have direct and demonstrable results in reducing ODS consumption in the country. They should be cost effective and be based on environmentally sound technologies to substitute for or recycle ODS.
2. Successful implementation of subprojects may sometimes depend directly on appropriate policies and regulations. In these cases, these policies should be addressed in the appraisal report for consideration by the MFEC. In general, however, overall economic and industrial policy reforms are not to be addressed in the context of subprojects but in the ODS Country Program as approved by the MFEC.

B. Guidelines for Subgrant Funding

3. OTF funding is provided as a grant to the subproject proponent implementing the subproject. The grant is calculated in **economic terms** for the "incremental costs", as elaborated below, based on the guidelines defined by MFEC and the Bank's interpretation of incremental costs.
4. Determination of Incremental Costs
 - (a) Definition. Incremental costs are defined as the net present value of incremental economic subproject costs (investment capital plus operating costs net of operating benefits) discounted at the economic cost of capital in the country (10% will be used in Malaysia) in constant economic prices over the economic life of the subproject. When appropriate, risks associated with technology, market and financing of undertaking the subproject should be taken into consideration.

- (b) Co-financing. In cases where the subproject proponent has to put up its own resources (from capital infusion or commercial loans) to co-finance part of the subproject costs, the necessity for providing sufficient financial incentive to undertake the subproject should be considered, i.e. subproject proponent should obtain an acceptable return on its own capital. In many cases subproject proponents will view ODS phase-out investments as necessary business costs and may not require financial incentives in addition to a grant for incremental costs. Under exceptional cases, and upon approval by the MFEC on a case-to-case basis, this grant amount would be determined in such a way that the Economic Rate of Return (ERR) on the risk capital is 10% (real terms).
- (c) Ownership. A Subproject is eligible for funding in direct proportion to the percentage of local ownership of the enterprise.
- (d) Exports to Non-Article 5 Countries. Enterprises which export to non-article 5 countries are eligible for funding based on the percent of total production that they export. That is:
- where exports to non-article 5 countries are equal to or less than 10% of total production, the total incremental costs are eligible;
 - where exports to non-article 5 countries exceed 10% of production but do not exceed 70%, the eligible incremental costs will be reduced equivalent to the percentage of total production represented by such exports less 10%;
 - where exports to non-article 5 countries exceed 70% of production, the project is not eligible.
- (e) Operating Costs and Savings. Under MFEC guidelines, incremental recurring costs net of operational savings are generally eligible for grant funding only up to four (4) years of project operation. MFEC imposes further restrictions on certain subsectors, such as solvent use and refrigeration.
- (f) Duties and Taxes. Import duties and other direct taxes are not eligible for grant funding. The recipient Government is being encouraged to agree on duty exemption for imports under this project.

C. Subproject Priority and Unit Abatement Costs

5. Priority is given to subprojects with cost effective technology, low unit abatement costs, and short period of time to achieve actual ODS phase-out. Relative cost effectiveness is measured as "unit abatement cost", a comparative index defined as follows:

$$A = \frac{C(F) + (OC-OS)}{W}$$

Where:

- A = Unit abatement cost, \$/kg ODP saved/year (at full operation)
- C = Incremental capital cost, including all initial one time costs such as technology, training
- F = Capital recovery factor; the annualized capital cost charges, discounted at a standard discount rate of 10% per year, over the economic life of the project.
- OC = Annual Operating Costs at full operation
- OS = Annual Operating benefits at full operation
- W = Quantity of ODS saved annually expressed as ODP units

6. The purpose of unit abatement cost calculation is to give a relative ranking of projects across countries and within same sector. Lower unit abatement costs correspond to higher priority in terms of cost effectiveness. The unit abatement cost is calculated at standard discount rates to facilitate cross country comparisons.

D. Elements of the Subproject Appraisal

CETEC would prepare appraisal reports along the following guidelines in a format acceptable to the Bank, including as a minimum the following elements:

7. Subproject scope. Including a full description of the proposed technology and the source of technology supply. In selected cases, description should refer to technical cooperation agreements between the subproject proponent and an international technology supplier. Where necessary, the description should distinguish between components relating to ODS phase-out directly and other components, such as expansion of output or product upgrading which are not eligible for OTF grant funding.

8. Schedule and quantity of ODS reduction. (Expressed as ODS and ODP), which will be phased out as a direct result of the subproject, on annual and total basis.

9. Subproject costs. Divided into (a) components relating to ODS phase-out and (b) other components. Costs should be broken down into investment and operating costs, costs eligible for OTF funding, foreign exchange and local costs, and expenditures already incurred for which retroactive financing will be requested.

10. Review of technical feasibility of the subproject. To determine the soundness of the technical proposal, based on local and international experience.
11. Financial analysis of enterprise. To determine the soundness of the enterprise by using a set of minimum financial indicators which reflect the enterprise's financial viability and its ability to implement the subproject. The indicators should be determined based on local conditions and should be consistent with commercial practice in the country.
12. Financing arrangements. In case of subprojects, where the OTF grant covers only part of the total project costs the following should be included: description of sources, terms and conditions, divided into (a) incremental costs related to ODS phase-out to be financed as an OTF grant, (b) amount to be provided by enterprise from its own resources; and (c) local and/or foreign loans to be financed through commercial loans from local and/or foreign institutions (at commercial interest rates). A confirmed financing plan should be submitted with the appraisal report.
13. Disbursement Plan. The amount and estimated schedule of disbursements, including, where applicable, the conditions for disbursement under multiple tranches, e.g. completion of certain measures and submission of satisfactory progress reports.
14. Subproject implementation arrangements. Description of management, engineering and technology acquisition, procurement, installation, operation, marketing, disassembling of phased out ODS equipment (to ensure that it cannot be reused) and schedule for all implementation steps.
15. Environmental aspects. Description of environmentally critical aspects of the subproject and measures to address the environmental risks. Furthermore, a certification that the subproject proponent has complied with local environmental regulations has to be attached to the appraisal report.
16. Reporting requirements. Description of the scope, the number and the timing of progress reports and other information which the subproject proponent has to submit to CETEC. As a minimum, the subproject proponent would submit one subproject progress report at the time when the proposed investment activities have been implemented and the new installations are operating. In cases where multiple disbursement tranches have been agreed upon, the subproject would submit one progress report prior to each tranche.

17. Subgrant Agreement. Attached to the appraisal report, DOE would submit a draft contract between DOE and the subproject proponent, based on a model agreement attached to the OPGs. The subgrant agreement spells out the responsibilities of the subproject proponent and sanctions in case of non-compliance.

