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

Eighteenth Meeting
Vienna, 22-24 November 1995

BILATERAL COOPERATION

PROJECT EVALUATION SHEET MALAYSIA

SECTOR: SOLVENTS ODS use in sector (1994): 150 ODP tonnes

Sub-sector cost-effectiveness thresholds: CFC-113 US \$19.73/kg.

Project Title:

Phasing Out the Use of CFC-113 in the Electronics Industry through the Technical Promotion of No Clean Processes

Project Data		
		CFC-113
ODS phase-out (ODP tonnes) ¹		24
Proposed project duration (Yr)		1
Incremental capital cost (US\$)		290,000
Contingency (%)		N/A
Incremental operational cost (US\$)		(63,400)
Total project cost (US\$)		226,600
Local ownership (%)		-
Export component (%)		-
Amount requested (US\$)	☐ Original	226,600
	☐ Revised	226,600
Cost effectiveness (US\$/kg)		9.44
National Coordinating Agency		Malaysia Department of Environment
Implementing Agency		French Government and UNEP for training
Technical review completed?		No

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	226,600
Project impact (ODP tonnes)	24
Cost effectiveness (US \$/kg)	9.44
Implementing Agency support cost (US\$)	N/A
Total cost to Multilateral Fund	226,600

¹ Figures for 1994.

PROJECT DESCRIPTION

Phasing Out the Use of CFC-113 in the Electronics Industry through the Technical Promotion of No Clean Processes

1. This project will phase out the use of 30 tonnes of CFC-113 (24 ODP tonnes) by implementing no clean technology use through local manufacturing of no clean chemicals and technical training. The training will be conducted at 13 electronic assembly factories that have agreed not to seek further ODS phase-out assistance from the Multilateral Fund.
2. To efficiently implement no clean technology - in terms of final reliability and first pass yields - good technical compatibility of the low residue soldering chemicals with the precise type of electronic assemblies has to be carefully studied. This means extensive technical trials in the different assembly processes and training of those involved in the manufacturing process. A small adaptation of the existing soldering equipment and processes may also be required (e.g., spray fluxing, change of thermal profile for reflow, etc).

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The cost-effectiveness of this project is well below the threshold established for this sub-sector by the Executive Committee at its Sixteenth Meeting. The no clean process is a well proven technology for the phase out of CFC-113.

RECOMMENDATIONS

1. This proposal meets the guidelines of the Executive Committee and is recommended for approval in the amount requested, US \$226,600.

2. The Treasurer should offset US \$226,600 against the Government of France's 1995 contributions to the Fund.

PROJECT EVALUATION SHEET BRAZIL

SECTOR: **REFRIGERATION** ODS use in sector (1993): 4,700 ODP tonnes

Sub-sector cost-effectiveness thresholds:

N/A

Project Title:

MACs Servicing Demonstration Project

Project Data	
	MACs
ODS phase-out (ODP tonnes) ¹	11
Proposed project duration (Yrs.)	2
Incremental capital cost (US\$) ²	308,000
Contingency (%)	N/A
Incremental operational cost (US\$)	N/A
Total project cost (US\$) ²	308,000
Local ownership (%)	-
Export component (%)	-
Amount requested (US\$) ☐ Original	293,000
☐ Revised	293,000
Cost effectiveness (US\$/kg) ²	28.00
National Coordinating Agency	Ministry of Environment
Implementing Agency	USEPA
Technical review completed?	N/A

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	293,000
Project impact (ODP tonnes) ¹	11
Cost effectiveness (US \$/kg) ²	28.00
Implementing Agency support cost (US\$)	n/a
Total cost to Multilateral Fund	293,000

¹ Figures are estimated from 6-11 tonnes based on experience.

² Included up to US \$15,000 for workshop expenses from UNDP Global MACs project. This figure is included in the cost-effectiveness measurement.

PROJECT DESCRIPTION

MACs Servicing Demonstration Project

1. The project “MACs servicing Demonstration Project” for Brazil, to be completed over approximately the next 12 months, will begin with data gathering and analysis. Based on this information and in cooperation with the Ministry of the Environment, EPA activities will include:

- A pilot project to introduce recycling such as a demonstration MACs recycling and training workshop;
- Training on practices to reduce CFC-12 used in MACs servicing;
- Furnishing recycling machines and related equipment to participating repair shops;
- Follow up data collection and preparation of a report to document the experience of Brazilian repair shops with MACs recycling;
- Training on HFC-134a equipment;
- Working with the Ministry, in the course of implementing the demonstration project, to explore the possibility of further reduction measures that could be taken in the MACs sector.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. This project is similar to those demonstration projects approved for Argentina, China, Colombia, the Dominican Republic, Mexico, and Venezuela. The project is a joint USA/UNDP project. UNDP will submit a separate request for the balance of total projects costs, from US \$6,000 to US \$15,000. The total cost for the Brazilian project is US \$308,000 of which US \$293,000 is requested as US bilateral cooperation.

RECOMMENDATIONS

1. The project proposal for Brazil is recommended for approval in the amount requested. The Treasurer should offset US \$293,000 against United States 1995 contributions to the Fund.

SECTOR: **REFRIGERATION** ODS use in sector (1993): 177 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A

Demonstration Project in Commercial Refrigeration Servicing (Food Storage, Distribution, and Retailing)

Project Data		
		Commercial Refrigeration
ODS phase-out (ODP tonnes) ¹		7.6
Proposed project duration (Yr)		1
Incremental capital cost (US\$) ²		152,000
Contingency (%)		N/A
Incremental operational cost (US\$)		N/A
Total project cost (US\$) ²		152,000
Local ownership (%)		-
Export component (%)		-
Amount requested (US\$)	☐ Original	74,000
	☐ Revised	74,000
Cost effectiveness (US\$/kg) ²		20.00
National Coordinating Agency		COGO/SURENA
Implementing Agency		USEPA
Technical review completed?		N/A

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	74,000
Project impact (ODP tonnes) ¹	7.6
Cost effectiveness (US \$/kg) ²	20.00
Implementing Agency support cost (US\$)	N/A
Total cost to Multilateral Fund	74,000

² Included up to US \$78,000 for workshop expenses from UNDP Global MACs project. This figure is included in the cost-effectiveness measurement.

PROJECT DESCRIPTION

Demonstration Project in Commercial Refrigeration Servicing (Food Storage, Distribution, and Retailing)

1. The project, “Demonstration Project in Commercial Refrigeration Servicing (Food Storage, Distribution and Retailing)” for the Dominican Republic (US \$74,000) will demonstrate the potential benefits of reducing CFC consumption in a select group of food stores and refrigeration servicing enterprises in the Santo Domingo area by carrying out a demonstration training workshop and providing equipment. The results of this project will be shared with other facilities that could adopt the CFC reduction measures without further outside funding.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. This project is part of a joint USA/UNDP project (total cost US \$152,000) which will demonstrate servicing and recycling in this sector for the Dominican Republic. UNDP will submit a separate request for the balance of total project costs, US \$78,000. This project is similar to the one approved for China at the Committee's 17th Meeting.

RECOMMENDATIONS

1. The project proposal for the Dominican Republic is recommended for approval in the amount requested. The Treasurer should offset US \$74,000 against United States 1995 contributions to the Fund.

SECTOR: **REFRIGERATION** ODS use in sector (1991): 1,217 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A

MACs servicing demonstration project

Project Data		MACs	
ODS phase-out (ODP tonnes) ¹			11
Proposed project duration (Yr)			1
Incremental capital cost (US\$) ²			300,500
Contingency (%)			N/A
Incremental operational cost (US\$)			N/A
Total project cost (US\$) ²			300,500
Local ownership (%)			-
Export component (%)			-
Amount requested (US\$)	□Original		285,500
	□Revised		285,500
Cost effectiveness (US\$/kg) ²			27.32
National Coordinating Agency			DENR/EMB
Implementing Agency			USEPA
Technical review completed?			N/A

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	285,500
Project impact (ODP tonnes) ¹	11
Cost effectiveness (US \$/kg) ²	27.32
Implementing Agency support cost (US\$)	N/A
Total cost to Multilateral Fund	285,500

² Included up to US \$15,000 for workshop expenses from UNDP Global MACs project. This figure is included in the cost-effectiveness measurement.

PROJECT DESCRIPTION

MACs servicing demonstration project

1. EPA activities for the project “ MACs Servicing Demonstration Project” for the Philippines include the following:

- assisting DENR/EMB to collect, update and analyze data on the MACs sector in the Philippines, and to recruit automobile repair shops to receive training and equipment;
- assisting with procurement of equipment, including developing equipment specifications;
- furnish recycling machines and related equipment to participating repair shops;
- prepare training materials arrange for instructors, organize and conduct MACs recycling and training workshop to reduce ODS emissions from MACs servicing; include training on HFC-134a equipment;
- work with DENR/EMB, in the course of implementing the demonstration project to explore further reduction measures that could be taken in the MACs sector;
- provide other technical support to DENR/EMB;
- conduct evaluation visits to participating shops and others that receive training and equipment through this project; and
- prepare a report to assess progress and to document the experience of the repair shops and others with MACs recycling

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. This project is also similar to those demonstrations projects approved for Argentina, China, Colombia, the Dominican Republic, Mexico, and Venezuela. The project is a joint USA/UNDP project. UNDP will submit a separate request for the balance of total project costs, US \$10,000 - US \$15,000. The total cost for the Philippine project is US \$300,500 of which US \$285,500 is requested as US bilateral cooperation.

RECOMMENDATIONS

1. The project proposal for the Philippines is recommended for approval in the amount requested. The Treasurer should offset US \$285,500 against United States 1995 contributions to the Fund.