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

Eighteenth Meeting
Vienna, 22-24 November 1995

PROJECT PROPOSAL: COLOMBIA

This document includes the Comments and Recommendations from the Fund Secretariat on the following project:

- Elimination of CFCs 11 and 12 in the manufacture of domestic refrigerators at Unilemh Ltda. (Challenger) UNDP

PROJECT EVALUATION SHEET COLOMBIA

SECTOR: REFRIGERATION ODS use in sector (1993): 315 ODP tonnes

Sub-sector cost-effectiveness thresholds: Domestic refrigeration US \$13.76/kg

Project Title: Elimination of CFCs 11 and 12 in the Manufacture of Domestic Refrigerators at UNILEMH Ltda. (Challenger)

Project Data	Domestic Refrigeration
	Challenger
ODS phase-out (ODP tonnes)	17.05
Proposed project duration (Yrs)	1.5
Incremental capital cost (US\$)	155,350
Contingency (%)	10
Incremental operational cost (US\$)	0
Total project cost (US\$)	155,350
Local ownership (%)	100
Export component (%)	0
Amount requested (US\$) { Original	166,000
{ Revised	155,350
Cost effectiveness (US\$/kg)	9.11
National Coordinating Agency	Ministry of Environment
Implementing Agency	UNDP
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	155,350
Project impact (ODP tonnes)	17.05
Cost effectiveness (US \$/kg)	9.11
Implementing Agency support cost (US\$)	20,195
Total cost to Multilateral Fund	175,545

PROJECT DESCRIPTION

1. CFC consumption in the domestic and commercial refrigeration sector in Colombia is estimated at 315 ODP tonnes. Projects to eliminate about 300 ODP tonnes were approved by the Executive Committee. The manufacture of domestic refrigerators and freezers in Colombia is shared between five companies. Four domestic refrigeration companies have already received funding to convert to non-ODS technology.

2. The project covers phase out of 17.05 ODP tonnes by converting to HFC-134a as a refrigerant and HCFC-141b as a blowing agent, and would complete the phase-out projects in this sub-sector.

3. The conversion will involve replacing the existing refrigeration system with charging board, vacuum pumps and leak detectors suitable for HFC-134a as well as prototype testing.

4. The available high pressure machine will be retrofitted to accommodate new requirements in foaming operations.

5. Project will provide funds for training and technology transfer.

6. Several important considerations influenced the Challenger decision in favour of HCFC-141b technology which primarily relate to limited supply of cyclopentane; other companies in Colombia also converted to HCFC-141b; HCFC-141b technology will allow quick and smooth transition and prevent from disruption of plant operations at a critical time in Challenger's entry into domestic refrigerator market.

7. The selection of HCFC-141b technology by Challenger is supported by the Colombia Ministerio del Medio Ambiente. Challenger understands that HCFC-141b is an interim solution which will require a change to an appropriate zero-ODP technology (either cyclopentane, or another commercially developed and acceptable alternative) at some future date. Challenger also understands and accepts that the costs associated with that subsequent technology change which are estimated at US \$500,000 - 600,000 will be funded from its own resources.

7. The enterprise will not request the incremental operating costs.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The chosen technologies are proven. The choice of interim HCFC technology in foaming operations is justified.
2. The Secretariat discussed with UNDP the eligibility and incrementality of all cost items. The project budget has been adjusted accordingly.

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the project with associated support costs at the funding level shown in the table below:

Project	Project Cost US \$	Support Cost US \$	Implementing Agency
Elimination of CFCs 11 and 12 in the Manufacture of Domestic Refrigerators at UNILEMH Ltda. (Challenger)	155,350	20,195	UNDP

2. The Fund Secretariat further recommends that the project be included in the Consolidated List.