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

Twenty-second Meeting
Nairobi, 28-30 May 1997

PROJECT PROPOSAL: EL SALVADOR

This document includes the comments and recommendations from the Fund Secretariat on the following project:

Refrigeration

- Elimination of CFCs 11 and 12 in the manufacture of domestic refrigerators and freezers at Prado S.A. de C.V.

UNDP

PROJECT EVALUATION SHEET **EL SALVADOR**

SECTOR: Refrigeration ODS use in sector (1995): 55.65 ODP tonnes

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

Project Titles:

Elimination of CFCs 11 and 12 in the manufacture of domestic refrigerators & freezers at Prado S.A. de C.V.

Project Data	Domestic
	Prado
ODS phase-out (ODP tonnes)	22.35
Proposed project duration (Yrs)	2
Incremental capital cost (US\$)	286,500
Contingency (%)	10
Incremental operational cost (US\$)	90,904
Total project cost (US\$)	377,404
Local ownership (%)	100
Export component (%)	0
Amount requested (US\$) {Original	377,404
{Revised	
Cost effectiveness (US\$/kg)	16.89
National Coordinating Agency	Secretaria Ejecutiva del Medio Ambiente (SEMA)
Implementing Agency	UNDP
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	306,229
Project impact (ODP tonnes)	22.35
Cost effectiveness (US \$/kg)	13.70
Implementing Agency support cost (US\$)	39,810
Total cost to Multilateral Fund	346,039

PROJECT DESCRIPTION

Elimination of CFCs 11 and 12 in the manufacture of domestic refrigerators & freezers at Prado S.A. de C.V.

1. ODS consumption in the domestic refrigeration sub-sector is estimated at 55.65 MT. Two enterprises are now engaged in the manufacture of domestic refrigerators.
2. The enterprise will phase out 22.35 ODP tonnes by converting to HFC-134a as a refrigerant and HCFC-141b as a blowing agent.
3. Implementation of this project will enable the Government of El Salvador to meet its obligations under the Montreal Protocol in 1999.
4. Whilst recognizing the environmental benefits of cyclopentane versus HCFC-141b, the company selected HCFC-141b, as a first stage, interim, replacement of CFC-11 as it provides the best energy efficiency and the lowest investment and operational costs. It is also most suited to the factory layout and present skill levels of the work-force at Prado S.A. This selection of technology is supported by the Government of El Salvador.
5. Prado S.A. 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. Prado S.A. also understands and accepts that any costs associated with subsequent conversion to zero ODP technology will be borne out by it.
6. The conversion will involve replacing the existing refrigeration system with a charging board, vacuum pumps and leak detectors suitable for HFC-134a as well as prototype testing. The low pressure foaming machine will be replaced with a high pressure foaming machine. The project will provide funds for training and technology transfer.
7. The enterprise has requested the incremental operating costs for 6 months duration.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The project proposal contains a statement that approval of this project is critical to achieving the goal of the total elimination of CFC-11 and CFC-12 in domestic refrigeration sector in 1998.
2. The chosen technologies are proven. The choice of an interim HCFC technology in foaming operations is justified.
3. The Secretariat discussed with UNDP the eligibility and incrementality of all cost items. The cost of vacuum pumps and a foaming machine were adjusted in accordance with recent quotations. The cost of a pre-mixing station was recognised as ineligible. The project budget has been adjusted accordingly.

RECOMMENDATIONS

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

	Project Cost US \$	Support Cost US \$	Implementing Agency
Elimination of CFCs 11 and 12 in the manufacture of domestic refrigerators & freezers at Prado S.A. de C.V.	306,229	39,810	UNDP