



**United Nations
Environment
Programme**



Distr.
LIMITED

UNEP/OzL.Pro/ExCom/19/36/Rev.1
23 April 1996

ORIGINAL: ENGLISH

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

Nineteenth Meeting
Montreal, 8-10 May 1996

PROJECT PROPOSAL: URUGUAY

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

Refrigeration

- Completing the elimination of CFC use in domestic refrigeration manufacturing - adoption of HCFC-141b as blowing agent and HFC-134a as refrigerant at Nevol S.A. World Bank

PROJECT EVALUATION SHEET URUGUAY

SECTOR: REFRIGERATION ODS use in sector (1992): 170 ODP tonnes

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

Project Titles:

Completing the elimination of CFC use in domestic refrigeration manufacturing - adoption of HCFC-141b as blowing agent and HFC-134a as refrigerant at Nevol Company

Project Data	Domestic
	Nevol
ODS phase-out (ODP tonnes)	10.46
Proposed project duration (Yrs)	14 months
Incremental capital cost (US\$)	186,000
Contingency (%)	15
Incremental operational cost (US\$)	39,331
Total project cost (US\$)	213,900
Local ownership (%)	100
Export component (%)	0
Amount requested (US\$) {Original	213,900
{Revised	141,512
Cost effectiveness (US\$/kg)	27.96
National Coordinating Agency	MVOTMA
Implementing Agency	World Bank
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	141,512
Project impact (ODP tonnes)	4.62 (revised)
Cost effectiveness (US \$/kg)	30.6
Implementing Agency support cost (US\$)	18,396
Total cost to Multilateral Fund	159,908

PROJECT DESCRIPTION

Completing the elimination of CFC use in domestic refrigeration manufacturing - adoption of HCFC-141b as blowing agent and HFC-134a as refrigerant at Nevol Company

1. There are two major domestic refrigeration companies in Uruguay, i.e. Nevol and Indunor companies. Project for Indunor company was approved by the Executive Committee.
2. This project aims at the ODS phase-out at Nevol company by converting to HFC-134a refrigerant and HCFC-141b blowing agent. The project covers high pressure foaming machine, refrigerant charging equipment, testing, training and model redesign.
3. The HCFC-141b alternative was studied along with a potential cyclopentane option. However, the latter was rejected on the basis of municipal regulations which would not permit the use of flammable materials at Nevol's site. Ultimately, HCFC-141b technology was chosen with the understanding that no further requests for funding a final conversion will be made.
4. Operating costs are requested for 6 months.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The chosen technologies are proven.
2. The Secretariat discussed with the World Bank eligibility and incrementality of all cost items as well as CFC consumption in the enterprise. CFC consumption, operational costs and cost-effectiveness were calculated on the basis of actual production in the enterprise. The cost of a foaming machine was determined on the basis of the capacity of the existing equipment.
3. Cost-effectiveness of the project is above the threshold value established for the domestic refrigeration sector. However, in considering the project, the Executive Committee may bear in mind the following considerations
 - (a) CFC consumption in Uruguay was 316.5 metric tonnes in 1992 which is below the 360 MT cut-off point established in Decision 17/11 as a qualifier for low ODS consuming countries.
 - (b) Nevol is the remaining major domestic refrigerator manufacturer in Uruguay.
 - (c) The project cost represents the minimum level of expenditure required for conversion

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the project on the basis of arrangements established at the 16th and 17th Meetings for the funding of projects from low volume ODS consuming countries, with associated support cost and the funding level shown below.

	Project Cost US \$	Support Cost US \$	Implementing Agency
Completing the elimination of CFC use in domestic refrigeration manufacturing - adoption of HCFC-141b as blowing agent and HFC-134a as refrigerant at Nevol Company	141,512	18,396	World Bank