



**United Nations
Environment
Programme**

Distr.
LIMITED

UNEP/OzL.Pro/ExCom/34/42
19 June 2001



ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-fourth Meeting
Montreal, 18-20 July 2001

PROJECT PROPOSAL: PARAGUAY

This document consists of the comments and recommendations of the Fund Secretariat on the following project proposal:

Refrigeration:

- Terminal umbrella project to phase out CFC-11 and CFC-12 consumption in the manufacture of commercial refrigeration equipment by replacement with HCFC-141b and HFC-134a at eleven small and medium-sized enterprises UNDP

**PROJECT EVALUATION SHEET
PARAGUAY**

SECTOR: Refrigeration ODS use in sector (1999): 345.28 ODP tonnes

Sub-sector cost-effectiveness thresholds: Commercial US \$15.21/kg

Project Titles:

- (a) Terminal umbrella project to phase out CFC-11 and CFC-12 consumption in the manufacture of commercial refrigeration equipment by replacement with HCFC-141b and HFC-134a at eleven small and medium-sized enterprises

Project Data	Commercial	
	Eleven SMEs	
Enterprise consumption (ODP tonnes)		9.49
Project impact (ODP tonnes)		9.07
Project duration (months)		42
Initial amount requested (US \$)		454,379
Final project cost (US \$):		
Incremental capital cost (a)		304,000
Contingency cost (b)		30,400
Incremental operating cost (c)		75,979
Total project cost (a+b+c)		410,379
Local ownership (%)		100%
Export component (%)		0%
Amount requested (US \$)		410,379
Cost effectiveness (US \$/kg.)		45.20
Counterpart funding confirmed?		Yes
National coordinating agency	Secretaria del Ambiente	
Implementing agency	UNDP	

Secretariat's Recommendations		
Amount recommended (US \$)		410,379
Project impact (ODP tonnes)		9.07
Cost effectiveness (US \$/kg)		45.20
Implementing agency support cost (US \$)		53,349
Total cost to Multilateral Fund (US \$)		463,728

PROJECT DESCRIPTION

Sector Background

Latest available total ODS consumption (1999)	369.70 ODP tonnes
Baseline consumption of Annex A Group I substances (CFCs)	146.90 ODP tonnes
Consumption of Annex A Group I substances for the year 1999	345.30 ODP tonnes
Baseline consumption of CFCs in refrigeration sector	167.23 ODP tonnes
Consumption of CFCs in refrigeration sector in 1999	345.28 ODP tonnes
Funds approved for investment projects in refrigeration sector as of end of 2000	US \$528,098.00
Quantity of CFC to be phased out in investment projects in refrigeration sector as of end of 2000	23.00 ODP tonnes

1. The total consumption of CFCs in the refrigeration sector in 1999, according to information from the Government of Paraguay, was 345.28 ODP tonnes. Paraguay is a low-volume-consuming country.

2. The Executive Committee has approved the RMP for Paraguay, including a recovery/recycling component to phase out 23 ODP tonnes of CFC in servicing operations. The survey on ODS consumption data was undertaken under the implementation of the RMP. According to the survey CFC consumption was reduced to 152.49 ODP tonnes in 2000.

3. Eleven small- and medium- sized enterprises were identified that manufacture different types of commercial refrigeration equipment. The remaining enterprises in the sector are predominantly small shops involved in servicing. The terminal umbrella project in the refrigeration sector was prepared by UNDP.

Project description

4. The current project will phase out 5.81 ODP tonnes of CFC-11 and 3.68 ODP tonnes of CFC-12 in the manufacture of commercial refrigeration equipment at the eleven enterprises (Bajo Zero, Frigolux, Friopar, Friotec, Frio Universal, Hidroelectrica, Kirichenko, M. R. Refrigeracion, Martinez Refrigeracion, Refricom and Superfrio). This will be achieved by converting CFC-11 to HCFC-141b as the foam blowing agent, and CFC-12 to HFC-134a as the refrigerant. The enterprises manufacture various types of refrigeration equipment (water coolers, bottle coolers, display cabinets, cooling compartments, refrigerated truck bodies and commercial freezers). Two enterprises (Hidroelectrica and Kirichenko) operate foam dispensers in the baseline while the other enterprises use polystyrene foam sheets for insulation. In addition, the enterprises operate CFC-12 charging, evacuation and leak detection equipment in the baseline.

5. At Hidroelectrica, the existing high-pressure foaming machine will be retrofitted, and at Kirichenko, the existing spray foam dispenser will be replaced. All enterprises will receive

various charging, leak detection and evacuation equipment. Other costs include redesign, testing, trials, training and technical assistance. Incremental operating costs are requested for a period of two years reflecting the higher cost of chemicals and an increase in foam density.

Justification for the use of HCFC-141b

6. Justification for the use of HCFC-141b by the two companies has been provided and is available in the Secretariat. The Government of Paraguay has also provided a letter endorsing the use of HCFC-141b by enterprises.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

7. The Secretariat discussed with UNDP the scope of retrofitting the existing high pressure dispenser at Hidroelectrica of 1982 vintage and the eligibility of the cost of a new mixing head. The cost of a new spray foaming machine was requested for Kirichenko to replace the Gusmer type dispenser. The Secretariat has advised UNDP to retrofit the existing dispenser providing a new one-side piston pump. The level of funding for these two companies has been agreed.

8. The cost-effectiveness of the umbrella project is US \$45.20/kg ODP, which is far in excess of the cost-effectiveness threshold established in the commercial refrigeration sector. Paraguay is a low volume consuming country, therefore the cost-effectiveness threshold was not applied.

RECOMMENDATION

9. The Fund Secretariat recommends blanket approval of the terminal umbrella commercial refrigeration project from UNDP with the level of funding and associated support costs as indicated below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Terminal umbrella project to phase out CFC-11 and CFC-12 consumption in the manufacture of commercial refrigeration equipment by replacement with HCFC-141b and HFC-134a at eleven small and medium-sized enterprises	410,379	53,349	UNDP