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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 PROPOSALS: ARGENTINA

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

Foam

- Conversion to non CFC technology in the manufacture of flexible foam (slabstocks) at FPV S.A. UNDP
- Eliminations of the use of CFCs in the manufacture of sandwich polyurethane panels and spray foams at Rheem S.A. UNDP
- Elimination of the use of CFCs in the manufacture of sandwich polyurethane panels and spray foams at Calofrig Asilaciones Jacobi S.A.I.C. UNDP

Refrigeration

- Phasing out of CFCs in the manufacturing plant of domestic refrigerators of Radio Victoria Catamarca S.A. UNIDO

SECTOR:	Foams	ODS use in sector (1992):	1,585 ODP tonnes
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Sub-sector cost-effectiveness thresholds:	Rigid	7.83 US \$/kg
	Flexible	6.23 US \$/kg

- Elimination of the use of CFCs in the manufacture of sandwich polyurethane panels and spray foams at Calofrig Aislaciones Jacobi S.A.I.C.
- Elimination of the use of CFCs in the manufacture of water heaters at Rheem S.A.
- Conversion to non-CFC technology in the manufacture of flexible foam (slabstocks) at FPV S.A.

Project Data	Rigid		Flexible
	Calofrig	Rheem	FPV
ODS phase-out (ODP tonnes)	72	12	19
Proposed project duration (Yrs)	2	2	2
Incremental capital cost (US \$)	759,000	71,500	70,000
Contingency (%)	10	10	10
Incremental operational cost (US \$)	Not requested	38,000	70,000
Total project cost (US \$)	759,000	109,500	140,000
Local ownership (%)	100	70	100
Export component (%)			
Amount requested (US \$) {Original}	563,750	84,350	118,000
{Revised}		76,650	
Cost effectiveness (US \$/kg)	7.83	6.39	6.21
National Coordinating Agency	OPROZ	OPROZ	OPROZ
Implementing Agency	UNDP	UNDP	UNDP
Technical review completed?	Yes	Yes	Yes

Amount recommended (US \$)	563,750	65,770	118,000
Project impact (ODP tonnes)	72	12	19
Cost effectiveness (US \$/kg)	7.83	5.48	6.21
Implementing Agency support cost (US \$)	73,288	8,550	15,340
Total cost to Multilateral Fund (US \$)	637,038	74,320	133,340

PROJECT DESCRIPTION

- (a) Elimination of the use of CFCs in the manufacture of sandwich polyurethane panels and spray foams at Calofrig Aislaciones Jacobi S.A.I.C.
- (b) Elimination of the use of CFCs in the manufacture of water heaters at Rheem S.A.
- (c) Conversion to non-CFC technology in the manufacture of flexible foam (slabstocks) at FPV S.A.

Calofrig Aislaciones Jacobi S.A.I.C.

1. Calofrig Aislaciones Jacobi S.A.I.C. will eliminate the use of CFCs in the manufacture of polyurethane sandwich panels and blocks through the introduction of formulations and procedures for foam injection based upon the use of pentane as blowing agent. Significant changes are necessary in order to assure adequate process safety in the change to pentane. The project includes equipment modification, plant conversion, consulting, production trials, testing and training and incremental operational costs for a period of two years. The company operates one high pressure Henneke HK1250 (1994) injection machine (panel production) and 100l/min Martin Sweets injection machine (block production).
2. The original costs of the project are as follows:
 - (i) Block Plant

High pressure dispenser, 200/kg/min	US \$180,000
Premix unit	US \$90,000
Ventilation and gas leak detector system	US \$60,000
Local works (building modifications, boxes, grounding of press	US \$25,000
 - (ii) Panel production plant

Reconversion of high pressure foaming unit	US \$80,000
Premix unit	US \$80,000
Storage tank	US \$40,000
Ventilation and gas leak detector system	US \$60,000
Local works	US \$25,000
 - (iii) International consultant assistance, technology transfer, safety audit and trials

Rheem S.A.

3. Rheem S.A. produces currently different types of appliances for domestic purposes and for air conditioning, such as water heaters and air heaters. The main products of the company are water heaters using gas or electricity. The company has two production plants, one in San Luis and the other in Buenos Aires. The water heaters are being

produced in the San Luis Plant. The company operates one Gusmer HIII foam dispenser with two heads.

4. The original costs of the project are as follows:

High pressure dispenser US \$40,000
Technology transfer, trials, verification testing and training US \$20,000
Incremental operational costs US \$50,000

FPV S.A.

5. FPV S.A. manufactures flexible slabstock polyurethane foam using a Laaderberg foaming machine. It will phase out the use of CFC-11 through the phased introduction of "low index technology". the project includes costs for the required metering and storage for additives and polyol, as well as trials, technology transfer and training, and compensation for 2 years incremental operating costs.
6. FPV S.A. is said to be an independent company with centralized administration by Piero S.A.I.C. jointly with Nuvel Crop S.A., companies for which a project has been approved to phase out CFC-11 in flexible slabstock foam production using liquid carbon dioxide technology.
7. At the 20th meeting of the Executive Committee UNDP submitted a project for FPV S.A. which requested cost of transporting low density foam which would have been produced at Piero S.A.I.C. plant in Buenos Aires and transported to the FPV S.A. plant at San Luis for fabrication, thus avoiding the need to convert its low density foam production, since it would not be able to make the additional investments which would be necessary to change over to LCD technology as the other bigger enterprises in Argentina. The project was, however, not approved, since the costs requested to be covered were not considered as eligible incremental operational costs. This is a revised version of the project which was submitted to the 20th meeting.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

The projects were discussed between the Fund Secretariat and UNDP and agreed.

Calofrig

1. High pressure foaming unit of 120 kg/min capacity at US \$180,000, premix unit at US \$80,000 and ventilation cost at US \$30,000 were agreed for the block production plant, while the cost of local works was agreed at US \$20,000 for each plant. The revised capital cost was therefore US \$753,500 instead of US \$814,000.

Rheem

2. The capital cost was revised to US \$715,000 due to revision in cost of storage tank, adaptation of the storage tank, temperature control from US \$15,000 to US \$5,000. It was agreed that the cost of extra temperature control was not eligible.

FPV

3. The project represents a change in the company's strategy to phase out the use of CFC-11 in its manufacturing operations. The project was discussed between the Secretariat and UNDP. UNDP affirmed that the technology to be adopted was mature and feasible. The costs were agreed.

Impact of the Projects on 1999 Freeze

4. The project documents indicates "As was mentioned in Argentina's Country Programme, in order to comply with the 1999 freeze required by the Montreal Protocol, the Government will have to phase out the use of CFC's in new equipment in the refrigeration and foam sectors by 1 January 2000. Most of the projects that were already approved for Argentina will be completed by the beginning of 1999. The present series of projects being submitted by Argentina in 1997 will be completed by the year 2000, and would therefore enable the country to further decrease its ODS consumption after 1999, enabling it to comply with the Montreal Protocol requirements. The ODS consumption remaining after that date would then mainly be for the servicing of existing refrigeration equipment, which constitutes 75% of the refrigeration sector."

RECOMMENDATION

1. The Fund Secretariat recommends blanket approval of the projects with the funding levels and associated support costs as indicated below.

<u>Project Title</u>	<u>Project Cost</u> US \$	<u>Support</u> <u>Cost US \$</u>	<u>Implementing</u> <u>Agency</u>
(a) Elimination of the use of CFCs in the manufacture of sandwich polyurethane panels and spray foams at Calofrig Aislaciones Jacobi S.A.I.C.	563,750	73,288	UNDP
(b) Elimination of the use of CFCs in the manufacture of water heaters at Rheem S.A.	65,770	8,550	UNDP
(c) Conversion to non-CFC technology in the manufacture of flexible foam (slabstocks) at FPV S.A.	118,000	15,340	UNDP

PROJECT EVALUATION SHEET **ARGENTINA**

SECTOR: Refrigeration ODS use in sector (1993): 762 ODP tonnes

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

Project Titles:

Phasing out of CFCs in the manufacturing plant of domestic refrigerators of Radio Victoria Catamarca S.A.

Project Data	Domestic
	Radio Victoria Catamarca S.A.
ODS phase-out (ODP tonnes)	39.81
Proposed project duration (Yrs)	2
Incremental capital cost (US\$)	599,896
Contingency (%)	10
Incremental operational cost (US\$)	Not requested
Total project cost (US\$)	599,896
Local ownership (%)	100
Export component (%)	
Amount requested (US\$) { Original	722,590
{ Revised	599,896
Cost effectiveness (US\$/kg)	15.07
National Coordinating Agency	Ministry of Environment
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	599,896
Project impact (ODP tonnes)	39.81
Cost effectiveness (US \$/kg)	15.07
Implementing Agency support cost (US\$)	77,986
Total cost to Multilateral Fund	677,882

PROJECT DESCRIPTION

Phasing out of CFCs in the manufacturing plant of domestic refrigerators of Radio Victoria Catamarca

1. There are fifteen major manufacturers of domestic appliances in Argentina. The Executive Committee approved eleven projects in this sector for Argentina.
2. The current annual production in Radio Victoria Catamarca company is 32,000 units. All of the current production is sold in Argentina and in other Article 5 countries. Under the projects submitted, the company will eliminate a total consumption of 39.81 MT of CFC-12 and CFC-11 by converting to isobutane as a refrigerant and to cyclopentane as a blowing agent.
3. This project is going to be implemented before the year 2000 and will, therefore, contribute to the freeze. The use of CFCs in manufacturing of new refrigeration equipment will be stopped by the 1st of January 2000.
4. Conversion to isobutane refrigerant involves the replacement of refrigerant charging boards, leak detectors, model redesign and testing.
5. Conversion to cyclopentane entails the retrofitting of existing high pressure foaming machines to meet safety requirements, modifying fixtures, providing storage and delivery systems for cyclopentane operations, and replacing the existing premixing stations. Conversion to cyclopentane and isobutane will necessitate also implementing a stringent safety programme to ensure personnel and plant safety owing to the flammable nature of cyclopentane and isobutane.
6. The supplier of compressors will provide technical assistance for model redesign and the modification of the production process. A reputable European company will assist in the adaptation of hydrocarbon technology including installation, start-up and compliance with safety regulations. Technical assistance will be provided as part of the Swiss-Argentina bilateral project approved at the 19th meeting of the Executive Committee.
7. The enterprise does not request incremental operational costs.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS**COMMENTS**

1. The project contains a statement "that this project would contribute to maintain the freeze after 1999."
2. The chosen technologies are proven.
3. The Secretariat discussed with UNIDO the eligibility and incrementality of the requested costs. Cost of budget items associated with cyclopentane storage, retrofit of jugs and technical assistance has been adjusted accordingly.

RECOMMENDATION

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
Phase out of CFCs in the manufacturing plant of domestic refrigerators of Radio Victoria Catamarca	599,896	77,986	UNIDO