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

Seventeenth Meeting
Montreal, 26-28 July 1995

PROJECT PROPOSALS: VENEZUELA

This document includes the Comments and Recommendations from the Fund Secretariat.

PROJECT EVALUATION SHEET

COUNTRY OR REGION:	Venezuela
PROJECT TITLE:	Elimination of CFCs 11 and 12 in the domestic and commercial refrigeration project at: <u>Domestic refrigeration</u> a) GRUPO FRIGILUX C.A. b) MADOSA S.A. <u>Commercial refrigeration</u> c) CORESMALT VALENCIA C.A. d) PINOVA S.A.
BUDGET:	a) Capital Costs: US \$1,008,000 Operating Costs: US \$213,599 (not requested) b) Capital Costs: US \$583,000 Operating Costs: US \$633,496 c) Capital Costs: US \$427,000 Operating Costs: US \$434,520 d) Capital Costs: US \$565,600 Operating Costs: US \$26,517 (not requested)
INCREMENTAL COSTS:	a) US \$1,008,000 b) US \$304,124 c) US \$861,520 d) US \$565,600
ODS PHASE-OUT:	a) 48.82 MT b) 93.04 MT c) 65.52 MT d) 27.32 MT
COST EFFECTIVENESS:	a) US \$13.55 per kg. ODP saved b) US \$13.08 per kg. ODP saved c) US \$13.15 per kg. ODP saved d) US \$12.25 per kg. ODP saved
PROJECT DURATION:	1.5 years

IMPLEMENTING AGENCY: UNDP

NATIONAL COORDINATING AGENCY: FONDOIN

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. This project evaluation sheet covers four projects on the conversion of both the refrigeration and foaming systems in four commercial and domestic refrigeration enterprises, CORESMALT, MADOSA, PINOVA, GRUPO FRIGILUX, to HFC-134a and HCFC-141b or cyclopentane.
2. The refrigeration system conversion to HFC-134a will require re-design of the system, prototyping, optimization and pilot scale manufacturing, testing and training.
3. Conversion to cyclopentane foaming technology will require high pressure foam machines, test runs, safety measures and training. This conversion is an ultimate solution.
4. Conversion to HCFC-141b foaming technology was chosen by companies where cyclopentane technology could not be applied. It will require high pressure foam machines, test runs and training. HCFC-141b is a transitional chemical, however, the high pressure foam machines should be easily modified to be compatible with future zero-ODP blowing agents at a very moderate cost.
5. The Secretariat reviewed the project proposals to assess the eligibility and costs of requested equipment and other project components in the light of similar projects approved by the Executive Committee. The Secretariat discussed with UNDP the incrementality of all costs components and their amounts.
6. It was agreed that replacement of capital equipment will be eliminated where retrofitting was possible. Cost of some items has been reduced on the basis of lower prices for the equipment available on the market. Some costs have been recognized as not eligible incremental costs.
7. Requested incremental costs have been reduced according to 25 per cent national ownership for MADOSA company.
8. Consequently it was agreed that new project budget should be recommended for approval.

9. Operating costs have been reviewed. Costs associated with HFC-134a compressors supplied by the compressor manufacturing company Vecomesa (Venezuela) have been deducted from incremental operating costs for MADOSA and CORESMALT companies since a project for conversion of Vecomesa company is submitted at the 17th Meeting of the Executive Committee. Operating costs have not been requested by PINOVA and GRUPO FRIGILUX companies.

10. The cost effectiveness was calculated on the basis of 100 per cent national ownership and excluding safety costs where applicable. Cost-effectiveness of each project is below the threshold established by the Executive Committee for commercial and domestic refrigerator subsectors.

11. It should be noted that safety related costs in companies using cyclopentane foaming technologies represent 40 per cent of incremental capital cost in PINOVA and 32 per cent in GRUPO FRIGILUX.

SECRETARIAT'S RECOMMENDATIONS

12. The Fund Secretariat recommends approval of the five projects and the approval of US \$2,386,104 in incremental costs as itemized in the following table and recommends US \$310,193 in support cost for UNDP.

Company	GRUPO FRIGILUX	MADOSA	CORESMALT	PINOVA
Sub-sector	Domestic	Domestic	Commercial	Commercial
Conversion technology	HFC-134a; cyclopentane	HFC-134a; HCFC-141b	HFC-134a; HCFC-141b	HFC-134a; HCFC-141b
Recommended Incremental cost (US\$)	953,000	230,274	685,330	517,500
Cost-effectiveness US\$/kg.	13.24	9.88	10.45	11.03

PROJECT EVALUATION SHEET

COUNTRY OR REGION:	Venezuela
PROJECT TITLE:	Conversion of CFC-12 Compressor Production Facilities at VECOMESA S.A. to Manufacture HFC-134a Compressors
BUDGET:	Capital Costs: US \$1,316,000 ¹ Operational Costs: US \$(not requested)
INCREMENTAL COSTS:	US \$544,166 ²
ODS PHASE-OUT:	0.72 MT
COST EFFECTIVENESS:	Cannot be meaningfully calculated
PROJECT DURATION:	1.5 years
IMPLEMENTING AGENCY:	UNDP
NATIONAL COORDINATING AGENCY:	FONDOIN
TECHNICAL REVIEW COMPLETED:	YES <u> X </u> NO <u> </u>

SECRETARIAT'S COMMENTS

1. The project covers the conversion of a production of CFC-12 compressors to HFC-134a refrigerants at VECOMESA company. The annual output of the company is about 297,000 compressors.

2. The proposal includes: redesign, prototyping and testing; modification of existing equipment where applicable; procurement and installation of new equipment or machinery; modification of assembly lines; and training.

3. A technical review was provided by UNDP.

¹ Including a 10 per cent contingency fee.

² Taking into account 41.35 per cent national ownership.

4. Incremental project cost has been calculated taking into account 41.35 per cent of national ownership.
5. The Secretariat reviewed the project proposal to assess the eligibility and costs of the requested equipment and other project components for the conversion to HFC-134a refrigerant technologies, in the light of similar projects approved by the Executive Committee. The Secretariat discussed with UNDP the incrementality of all cost components and their amounts.
6. It was agreed that replacement of capital equipment will be eliminated where retrofitting was possible. Technological upgrades were identified and the relevant costs have been deducted from the budget. Some cost items have not been recognized as eligible incremental costs.
7. Operating costs have not been requested.
8. Consequently, it was agreed that the new project budget should be recommended for approval.
9. It was also agreed that cost-effectiveness cannot be meaningfully calculated for compressor manufacturer conversion project. The Executive Committee might wish to use conversion cost per unit as an indicator to compare relative cost-effectiveness of this type of projects. The conversion cost per unit in VECOMESA project is US \$ 3.67 per unit.

SECRETARIAT'S RECOMMENDATIONS

10. The Fund Secretariat recommends approval of US \$362,000 for the implementation of the project at VECOMESA, and recommends US \$47,060 in support costs for UNDP
11. The Fund Secretariat recommends also to transfer the approved allocations to UNDP from the amount of US \$8,900,000 reserved by the Executive Committee for funding of projects in mobile air-conditioner and compressor sub-sector in 1995.