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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
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PROJECT PROPOSALS: VENEZUELA

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

Foam

- Phasing out CFC-11 with HCFC-141b at Amerio Industrial S.A. in the production of rigid P.U. panels UNIDO
- Phasing out CFC-11 with HCFC-141b at Novemeca in the production of rigid P.U. panels UNIDO

Refrigeration

- Phasing out CFC-12 with HFC-134a and CFC-11 with HCFC-141b at five commercial refrigeration companies (umbrella project) UNIDO
- Phasing out CFC-12 with HFC-134a and CFC-11 with HCFC-141b at three domestic refrigeration companies (umbrella project) UNIDO

**PROJECT EVALUATION SHEET
VENEZUELA**

SECTOR: Foam ODS use in sector (1998): 617.2 ODP tonnes

Sub-sector cost-effectiveness thresholds: Rigid US \$7.83/kg

Project Titles:

- (a) Phasing out CFC-11 with HCFC-141b at Amerio Industrial S.A. in the production of rigid P.U. panels
(b) Phasing out CFC-11 with HCFC-141b at Novemeca in the production of rigid P.U. panels

Project Data	Rigid	
	Amerio	Novemeca
Enterprise consumption (ODP tonnes)	13.30	18.20
Project impact (ODP tonnes)	11.80	16.20
Project duration (months)	18	18
Initial amount requested (US \$)	88,039	91,886
Final project cost (US \$):		
Incremental capital cost (a)	35,000	35,000
Contingency cost (b)	2,000	2,000
Incremental operating cost (c)	51,039	32,886
Total project cost (a+b+c)	88,039	69,886
Local ownership (%)	100%	100%
Export component (%)	0%	0%
Amount requested (US \$)	88,039	69,886
Cost effectiveness (US \$/kg.)	7.43	4.31
Counterpart funding confirmed?		
National coordinating agency	FONDOIN	FONDOIN
Implementing agency	UNIDO	UNIDO

Secretariat's Recommendations		
Amount recommended (US \$)	88,039	69,886
Project impact (ODP tonnes)	11.80	16.20
Cost effectiveness (US \$/kg)	7.43	4.31
Implementing agency support cost (US \$)	11,445	9,085
Total cost to Multilateral Fund (US \$)	99,484	78,971

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1997)	3,842.4	ODP tonnes
- Baseline consumption* of Annex A Group I Substances (CFCs)	3,321.6	ODP tonnes
- 1998 consumption of Annex A Group I substances	3,212.7	
- Baseline consumption of CFCs in foam sector	642.4	
- 1998 consumption of CFCs in foam sector	617.2	
- Funds approved for investment projects in Foam sector as of end of 1998	US \$ 1,974,230	
- Quantity of CFC to be phased out in foam sector as of end of 1998	355.5	ODP tonnes
- Quantity of CFC phased out in foam sector as of end of 1998	332.6	ODP tonnes
- Quantity of CFC to be phased out in projects approved in 1999 (27 th and 28 th Meetings)	103.2	ODP tonnes
- Funds approved for investment projects in the foam Sector in 1999 (27 th and 28 th Meetings)	US \$ 563,745	

*Baseline consumption of Annex A controlled substances refers to average of the consumption for the years 1995-1997 inclusive.

1. Amerio Industrial and Novemeca used 13.3 and 18.2 ODP tonnes of CFC-11 respectively in 1998. Amerio Industrial produces foam panels for refrigerators and refrigerated trucks as well as push carts for ice cream and cold drinks. Novemeca manufactures rigid polyurethane foam supports for office chairs. Both companies will phase out CFC-11 by the use of HCFC-141b.

2. Both companies operate low pressure machines which will be retrofitted for use with HCFC-141b. The incremental capital costs include retrofit costs (US \$40,000 for each machine), technology transfer, training, commissioning, start-up and trials (US \$15,000 (Amerio) and US \$25,000 (Novemeca)). There are incremental operating costs of US \$51,039 and US \$32,886 respectively.

Impact of the projects

3. The two projects will phase out 31.5 tonnes CFC-1. This constitutes about 1% of Venezuela's baseline consumption of Annex A Group I controlled substances and 4.9% of the baseline foam sector consumption of these substances. There will be residual ODP of 3.5 ODP tonnes resulting from the use of HCFC-141b.

Justification for use HCFC-141b

4. Justification for the use of HCFC-141b by the companies have been provided by UNIDO together with a letter of consent from the Government of Venezuela. Copies are attached to this evaluation sheet.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS**COMMENTS**

1. The Fund Secretariat and UNIDO discussed the projects and agreed as follows; retrofit costs of low pressure machines should be US \$20,000 per machine and technology transfer, training and trials US \$15,000 per project.

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the Amerio Industrial and Novemeca projects with the levels of funding and associated support costs indicated in the table below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Phasing out CFC-11 with HCFC-141b at Amerio Industrial S.A. in the production of rigid P.U. panels	88,039	11,445	UNIDO
(b)	Phasing out CFC-11 with HCFC-141b at Novemeca in the production of rigid P.U. panels	69,886	9,085	UNIDO

**PROJECT EVALUATION SHEET
VENEZUELA**

SECTOR: Refrigeration ODS use in sector (1998): 2,480 ODP tonnes

Sub-sector cost-effectiveness thresholds: Commercial US \$15.21/kg
Domestic US \$13.76/kg

Project Titles:

- (a) Phasing out CFC-12 with HFC-134a and CFC-11 with HCFC-141b at five commercial refrigeration companies (umbrella project)
- (b) Phasing out CFC-12 with HFC-134a and CFC-11 with HCFC-141b at three domestic refrigeration companies (umbrella project)

Project Data	Commercial	Domestic
	Umbrella (5)	Umbrella (3)
Enterprise consumption (ODP tonnes)	32.50	28.30
Project impact (ODP tonnes)	30.90	27.00
Project duration (months)	24	24
Initial amount requested (US \$)	463,663	369,899
Final project cost (US \$):		
Incremental capital cost (a)	400,582	327,732
Contingency cost (b)	38,058	30,973
Incremental operating cost (c)	30,500	13,000
Total project cost (a+b+c)	469,140	371,705
Local ownership (%)	100%	100%
Export component (%)	0%	0%
Amount requested (US \$)	469,140	371,705
Cost effectiveness (US \$/kg.)	15.21	13.76
Counterpart funding confirmed?		
National coordinating agency	FONDOIN	FONDOIN
Implementing agency	UNIDO	UNIDO

Secretariat's Recommendations		
Amount recommended (US \$)	469,140	371,705
Project impact (ODP tonnes)	30.90	27.00
Cost effectiveness (US \$/kg)	15.21	13.76
Implementing agency support cost (US \$)	60,988	48,322
Total cost to Multilateral Fund (US \$)	530,128	420,027

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1997)	3,703.9	ODP tonnes
- Baseline consumption* of Annex A Group I substances (CFCs)	3,321.6	ODP tonnes
- 1998 consumption of Annex A Group I substances	Not available	ODP tonnes
- Baseline consumption of CFCs in refrigeration sector	2,503	ODP tonnes
- 1998 consumption of CFCs in refrigeration sector	2,480.6	ODP tonnes
- Funds approved for investment projects in refrigeration sector as of March 1999	US \$ 13,196,403	
- Quantity of CFC to be phased out in refrigeration sector as of March 1999 (27 th Meeting)	621.5	ODP tonnes

*Baseline consumption of Annex A controlled substances refers to average of the consumption for the years 1995-1997 inclusive.

2. Original equipment manufacturers in the refrigeration sector in Venezuela consists of a number of domestic and commercial refrigeration enterprises. Three large domestic refrigeration enterprises have received assistance from the Multilateral Fund to phase out a consumption of 204.5 ODP tonnes. In the commercial refrigeration sub-sector, the Multilateral Fund assisted six small- and medium-sized enterprises to phase out 117.8 ODP tonne. The Multilateral Fund also funded the conversion of the Vecomesa compressor production facility to manufacture HFC-134a compressors. It is estimated that the refrigeration sector includes an additional 20 small-sized domestic and commercial refrigeration enterprises which have not yet been converted.

Five Commercial Refrigeration Enterprises (umbrella project)

3. In 1998, The five small-sized companies Unidas, Inrefrisa, Cold Front, Refrivenca and Europa consumed a total of 23.0 ODP tonnes of CFC-11 and 10.0 ODP tonnes of CFC-12 in the production of a variety of commercial refrigeration equipment such as refrigerators, condensing units, freezers, bottle coolers and display cabinets. The five enterprises will convert their foam operations from CFC-11 to HCFC-141b as the blowing agent (as the interim technology, with a later conversion to an ODS-free technology) and refrigerant operations from CFC-12 to HFC-134a resulting in a total phase out of 30.9 ODP tonnes.

4. Unidas and Cold Front operate low pressure dispensers. The two low pressure foaming machines will be scrapped, they will be replaced with appropriate high pressure dispensers for US \$90,000 each. Refrivenca will modify the existing manual foaming operation and will receive a low pressure foaming machine for US \$36,000. Inrefrisa and Europa do not use polyurethane foam insulation in their products. No incremental costs are sought for the foam part in these two companies.

5. Cold Front charges its product with HCFC-22 refrigerant. No funding is requested in the project proposal for the refrigerant part for this company. The remaining four enterprises will

receive funds for replacement of baseline charging and leak detection equipment and for replacement/retrofit of vacuum pumps. The proposal seeks funding of redesign, training and consultancy, and trial production costs. Only limited incremental operating costs are claimed due to the limitation of the cost-effectiveness threshold figure: US \$11,000 for Unidas, US \$9,500 for Cold Front, US \$7,000 for Refrivencia and US \$3,000 for Europa.

Three Commercial Refrigeration Enterprises (umbrella project)

6. In 1998, three small-sized companies, Nordpol, Friocon and Tecobar consumed a total of 22.0 ODP tonnes of CFC-11 and 6.3 ODP tonnes of CFC-12 in the production of commercial refrigeration equipment such as chest freezers and bottle coolers. The two enterprises will convert their foam operations from CFC-11 to HCFC-141b as the blowing agent (as the interim technology, with a later conversion to an ODS-free technology) and refrigerant operations from CFC-12 to HFC-134a resulting in a total phase out of 27.0 ODP tonnes.

7. At Nordpol, the low pressure foaming machine will be replaced with an appropriate high pressure dispenser for US \$90,000. Friocon and Tecobar will modify the existing manual foaming technology and each will receive a low pressure foaming machine for US \$36,000 per unit. The three companies operate various charging, leak detection and evacuation equipment which will be replaced/retrofitted to handle HFC-134a refrigerant. The proposal includes funds for model redesign and trial production. Limited incremental operating costs are claimed: US \$7,000 for Nordpol and US \$3,000 each for Friocon and Tecobar. The costs are related to the higher cost of chemicals. No incremental cost is requested for HFC-134a compressors. The funding requested is at the threshold limit for each enterprise.

Justification for the Use of HCFC-141b

8. All the enterprises have selected HCFC-141b technology to replace CFC-11 in foam blowing operations. A letter advising of the Government's decision to use HCFC technology has been received by the Secretariat in accordance with Executive Committee decision 27/13 and is attached to this evaluation together with the justification and undertakings from each enterprise.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Secretariat has discussed with UNIDO the provision of pre-heating ovens to Unidas and Cold Front. Additional information has been provided to justify the requested allocations. The Secretariat has also discussed the calculation of consumption by Inrefrisa company, the cost of redesign and trial in Cold Front, the cost of portable charge stations and the cost of replacement/retrofit of vacuum pumps for all enterprises. The project document has been revised accordingly.

RECOMMENDATIONS

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

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Phasing out CFC-12 with HFC-134a and CFC-11 with HCFC-141b at five commercial refrigeration companies (umbrella project)	469,140	60,988	UNIDO
(b)	Phasing out CFC-12 with HFC-134a and CFC-11 with HCFC-141b at three domestic refrigeration companies (umbrella project)	371,705	48,322	UNIDO