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

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

Foam:

- Rigid Umbrella project - Phaseout of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at 9 foam manufacturers UNDP
- Phasing out CFC-11 by conversion to HCFC-141b as a blowing agent in the manufacture of rigid P.U. foams (Umbrella II) UNIDO

Refrigeration:

- Replacement of CFC-11 by HCFC-141b in the manufacture of rigid polyurethane foam for domestic refrigerators and sandwich panels at MTH S.R.L. World Bank
- Change of technology: Elimination of CFCs in the manufacturing plant of domestic refrigerators at Lobato San Luis S.A. World Bank

Solvent:

- Change of technology for 3 out of 9 enterprises of the umbrella project for conversion from MCF used as solvent to aqua based cleaning (ARG/SOL/28/INV/91) World Bank

**PROJECT EVALUATION SHEET
ARGENTINA**

SECTOR: Foam ODS use in sector (1999): 1,370 ODP tonnes

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

Project Titles:

- (a) Rigid Umbrella project – Phaseout of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at 9 foam manufacturers
 (b) Phasing out CFC-11 by conversion to HCFC-141b as a blowing agent in the manufacture of rigid P.U. foams (Umbrella II) (seven companies)

Project Data	Rigid	Rigid
	9 foam manufacturers	Umbrella II
Enterprise consumption (ODP tonnes)	49.60	51.75
Project impact (ODP tonnes)	44.80	46.06
Project duration (months)	36	24
Initial amount requested (US \$)	334,624	340,055
Final project cost (US \$):		
Incremental capital cost (a)	279,000	244,100
Contingency cost (b)	27,900	21,210
Incremental operating cost (c)	143,980	64,185
Total project cost (a+b+c)	450,880	329,495
Local ownership (%)	100%	100%
Export component (%)	0%	0%
Amount requested (US \$)	320,332	329,495
Cost effectiveness (US \$/kg.)	7.15	7.15
Counterpart funding confirmed?	Yes	Yes
National coordinating agency	OPROZ	OPROZ
Implementing agency	UNDP	UNIDO

Secretariat's Recommendations		
Amount recommended (US \$)	320,332	329,495
Project impact (ODP tonnes)	44.80	46.06
Cost effectiveness (US \$/kg)	7.15	7.15
Implementing agency support cost (US \$)	41,643	42,834
Total cost to Multilateral Fund (US \$)	361,975	372,329

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1999)	4,964.10	ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	5,061.70	ODP tonnes
- Consumption of Annex A Group I substances for the year 1999	4,316.30	ODP tonnes
- Baseline consumption of CFCs in foam sector	2,100.00	ODP tonnes
- Consumption of CFCs in foam sector in 1999	1,370.00	ODP tonnes
- Funds approved for investment projects in foam sector as of end of 1999	US \$9,462,666.00	
- Quantity of CFC to be phased out in foam sector as of end of 1999	1,631.90	ODP tonnes
- Quantity of CFCs phased out in investment projects in the foam sector as of end of 1999	779.00	ODP tonnes
- Funds approved for investment projects in the foam sector approved in 2000	US \$594,300	
- Quantity of CFC to be phased out in foam projects approved in the year 2000	98.70	ODP tonnes

1. Based on analysis of data reported by Argentina to the Ozone Secretariat and other relevant data, the country appears to be in compliance with the CFC freeze. In order to meet the 50% CFC reduction by 2005, an additional 339.55 ODP tonnes of CFC must be phased out.

Rigid Foam

2. Two umbrella projects are submitted by UNDP and UNIDO in the rigid foam sub-sector for 16 small- and medium- scale foam producers in Argentina. The UNDP project (Umbrella Project I) covers 9 foam producers with a total consumption (in 1999) of 49.6 tonnes, while the UNIDO project covers 7 foam producers with a total consumption (average 1997-1999) of 51.8 tonnes. The companies produce products for a variety of applications including construction, cold stores and display cabinets, truck bodies and insulated tanks. They use high pressure sprayfoam equipment as well as low pressure dispensers of various makes. Profiles of the companies are provided in tables 1 and 2.

3. All the companies will convert their production to HCFC-141b technology as an interim technology. The cost of conversion in the two projects includes the cost of replacement of low pressure dispensers with high pressure at US \$50,000-60,000, replacement of low pressure sprayfoam dispensers with high pressure at US \$15,000 and cost of retrofit of the high pressure sprayfoam machines at US \$5,000. In the Umbrella I project trials, technology transfer and training will be US \$8,000 per project while in the Umbrella II project technology transfer, training and commissioning will be US \$4,000 per project. Incremental operating costs range from about US \$4,500 to US \$53,700 in the Umbrella I project and from US \$6,560 to US \$18,500 in the Umbrella II project.

Justification for the use of HCFC-141b

4. Both UNDP and UNIDO provide justification for the use of HCFC-141b in the technology evaluation. They both stated that during the preparation of the projects the companies were briefed on the available technological options and the related technical, commercial and other issues. UNDP provided annexes of additional justification, projected “techno-economic” impact of zero ODP technologies and the cost of future conversion to non-ODS technology, which are attached as annexes to this evaluation. UNIDO stated that no further investment is foreseen to convert to zero ODP technology. The Government of Argentina has provided letters endorsing the use of HCFC-141b by the companies, copies of which are attached.

Impact of the projects

5. A total of 90.86 ODP tonnes will be phased out by the two umbrella projects. This will eliminate 2.1% of Argentina’s 1999 consumption of Annex A Group I substances. There will be residual CFC-11 ODS consumption of 10.5 ODP tonnes as a result of the use of HCFC-141b.

SECRETARIAT’S COMMENTS AND RECOMMENDATIONS**COMMENTS**

1. The Fund Secretariat has discussed the two umbrella projects with the implementing agencies (UNDP and UNIDO) and agreed on the grants for each project, as follows:

Umbrella I (9 enterprises): US \$320,332
Umbrella II: US \$329,495

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the two umbrella projects, Umbrella I project (9 foam manufacturers) and Umbrella II project with the levels of funding and associated support costs indicated below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Rigid Umbrella project - Phaseout of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at 9 foam manufacturers	320,332	41,643	UNDP
(b)	Phasing out CFC-11 by conversion to HCFC-141b as a blowing agent in the manufacture of rigid P.U. foams (Umbrella II) (seven companies)	329,495	42,834	UNIDO

Table 1: Profile of Enterprises in the Rigid Foam Sub-sector Umbrella Project I

Enterprise	Founded	ODS Use Tonnes 1999	Foam Product	Baseline Equipment*	Impact ODP Eliminated Tonnes	ICC US \$	IOC US \$	Total Project Cost US \$	Requested Grant US \$	Cost-effectiveness US \$/kg
Produmerc	1984	1.6	Sprayfoam	Gusmer FF-1600	1.4	14,300	4,749	19,049	10,962	7.83
Prodnova	1991	2.3	Thermal insulation	Glascraft (mini, maxi)	2.1	19,800	6,981	26,781	16,443	7.83
Carlos Masciotta	1994	6.5	Sprayfoam	2 Glascraft Maxi	5.9	8,800	16,852	25,652	25,652	4.35
Elido Palermo	1981	8.4	Trucks, panels, spray	2Gusmer H-II, Gusmer FF-1600	7.6	77,000	19,897	96,897	59,508	7.83
Carlos Castillo	1993	8.3	Sprayfoam	Tans LPD 6 kg/min	7.5	25,300	23,518	48,818	48,818	6.51
Estanislao Kowcz	1955	2.5	Trucks	2 Hennecke H2 LPD	2.3	22,000	5,204	27,204	18,009	7.83
Constructora Vimax	1955	1.6	Sprayfoam	Gusmer H-II, Gusmer FF-1600	1.6	36,300	4,519	40,819	12,528	7.83
Gaspar Adragna	1975	4.5	Doors	ICR 12 kg/min	4.1	25,300	8,556	33,856	32,103	7.83
Pacido Sandoval	1984	13.7	Sprayfoam, blocks, tank insulation	2 Gusmer FF-220, Gusmer H-II, Glascraft Maxi, Mecpol	12.3	78,100	53,704	131,804	96,309	7.83
Total					44.8	306,900	143,980	450,880	320,332	7.15

* All the baseline equipment were installed before 25 July 1995 except 2 Glascraft Maxi of Carlos Masciotta installed in 1996 and 1997.
LPD: Low pressure dispenser

Table 1: Profile of Enterprises in the Rigid Foam Sub-sector Umbrella Project II

Enterprise	Founded	ODS Use Tonnes 1999	Foam Product	Baseline Equipment*	Impact ODP Eliminated Tonnes	ICC US \$	IOC US \$	Total Project Cost US \$	Requested Grant US \$	Cost-effectiveness US \$/kg
Aislaciones y servicios Maximo	1990	6.5	Sprayfoam	2 LPD Aistec 8 kg/min	5.8	37,000	7,280	44,280	44,280	7.65
Baduco D & D	1960	7.50	Insulated tanks	2 LPD Rosasco 1 self-made 20 kg/min 1 Rosasco spray	6.7	44,150	7,933	52,083	52,083	7.81
Bolatti	1991	6.70	Panels	LPD ICR 40 kg/min	6.0	39,200	7,089	46,289	46,289	7.76
Hi-Tec Poliuretano Alberto	1994	9.49	Sprayfoam	3 Gusmer FF-1600 (1 in 1997)	8.5	30,000	18,502	37,502	37,502	4.44
Nagera Jose	1961	6.20	Panels	Rosasco 40 kg/min	5.5	36,450	6,561	43,011	43,011	7.79
Stefanelli Vincer	1984	9.13	Cold stores, display cabinets	2 Aistec LPD (40 kg/min and 60 k/min)	8.1	53,060	10226	63,286	63,286	7.79
S.R.L.	1994	6.23	Panels	Viking LPD	5.5	36,450	6,594	43,044	43,044	7.76
Total					46.1	276,310	64,185	329,495	329,495	7.15

All the equipment were installed before 25 July 1995 except 1 Gusmer FF-1600 of Hi-Tec Poliuretano installed in 1997.

*LPD low pressure dispenser

**PROJECT EVALUATION SHEET
ARGENTINA**

SECTOR: Refrigeration ODS use in sector (199): ODP tonnes
Sub-sector cost-effectiveness thresholds: Domestic US \$15.21/kg

Project Titles:

- (a) Change of technology: Elimination of CFCs in the manufacturing plant of domestic refrigerators at Lobato San Luis S.A.
- (b) Replacement of CFC-11 by HCFC-141b in the manufacture of rigid polyurethane foam for domestic refrigerators and sandwich panels at MTH S.R.L.

Project Data	Domestic	Domestic
	Lobato San Luis	MTH
Enterprise consumption (ODP tonnes)	19.40	6.25
Project impact (ODP tonnes)	18.53	5.56
Project duration (months)	24	24
Initial amount requested (US \$)	254,956	96,052
Final project cost (US \$):		
Incremental capital cost (a)	319,887	75,000
Contingency cost (b)	31,989	7,500
Incremental operating cost (c)	45,634	84,323
Total project cost (a+b+c)	397,510	166,823
Local ownership (%)	100%	100%
Export component (%)	0%	0%
Amount requested (US \$)	254,956	0
Cost effectiveness (US \$/kg.)	13.76	13.76
Counterpart funding confirmed?	Yes	Yes
National coordinating agency	UEPRO	OPROZ
Implementing agency	IBRD	IBRD

Secretariat's Recommendations		
Amount recommended (US \$)		
Project impact (ODP tonnes)		
Cost effectiveness (US \$/kg)		
Implementing agency support cost (US \$)		
Total cost to Multilateral Fund (US \$)		

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1999)	4,964.10 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	4,855.50 ODP tonnes
- Consumption of Annex A Group I substances for the year 1999	3,550.00 ODP tonnes
- Baseline consumption of CFCs in refrigeration sector	Not available ODP tonnes
- Consumption of CFCs in refrigeration sector in 1992	1,451.00 ODP tonnes
- Funds approved for investment projects in refrigeration sector as of July 2000 (31st Meeting)	US\$23,224,319.00
- Quantity of CFC to be phased out in investment projects in refrigeration sector as of end of 1999	722.00 ODP tonnes

1. The major manufacturers of domestic and commercial refrigeration equipment have been converted to non-ODS technologies. However, a number of small- and medium-sized refrigeration companies are still using CFC-based technologies in Argentina.

MTH S.R.L.

2. The enterprise consumed 9.1 ODP tonnes of CFC-11 in its foam operation in 1999. This consumption is sub-divided into consumption for foam operation in manufacturing of domestic refrigerators and freezers (6.25 ODP tonnes) and rigid foam operation (2.8 ODP tonnes) in the production of insulation sandwich panels. The enterprise operates an in-house foaming machine in the baseline.

3. The refrigeration units are based on absorption technology (ammonia) as a refrigerant, and therefore no CFC-12 is consumed.

4. The current project will phase-out 9.1 ODP tonnes of CFC-11 used by MTH S.R.L by converting from CFC-11 to HCFC-141b as the foam blowing agent. Under the current project, the existing foaming machine will be replaced by a high-pressure foam dispenser (US \$65,000). Other costs include testing, trials (US \$5,000), technical assistance and training (US \$5,000). Incremental operating costs are requested by the enterprise at a level of (US \$13,552) reflecting the higher cost of chemicals and an increase in foam density.

Lobato San Luis S. A.

5. The project for Lobato San Luis , domestic refrigeration company, was approved by the Executive Committee at its 13th Meeting at the cost of US \$410,683. The approved project included the conversion from CFC-11 to cyclopentane in foam blowing operations and from CFC-12 to HFC-134a in refrigerant operations.

6. In the course of implementation of the project, the company realized that based on quotations received from equipment suppliers the cost of conversion turned out to be more expensive than expected. The enterprise has been unable to co-finance the additional costs.

7. In order to implement the project the World Bank is requesting from the Executive Committee the approval of a change in technology for the foaming operation in Lobato. The requested technology is based on HCFC-141b as the blowing agent. The requested grant in the revised proposal is US \$254,956 which is lower than on that in the approved project (US \$410,683). The difference will be returned to the Multilateral Fund.

8. The original project for Lobato was approved after Decision 22/71 on change of technology was adopted. In accordance with this decision, the project is submitted to the Executive Committee for individual consideration together with the Secretariat's review and comments.

Justification for the use of HCFC-141b

9. The two enterprises have selected HCFC-141b technology to replace CFC-11 in their foam blowing operations. It is an interim solution until non-CFC systems (different from hydrocarbons) are commercially available. A letter advising the Government decision to use HCFC technology has been received by the Secretariat in accordance with the Executive Committee Decision 27/13 and is attached to this evaluation together with a justification from the implementing agency.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

MTH

1. The Secretariat has sought clarification from the World Bank on the weight of foam insulation used in the calculation of incremental operating cost for production of refrigerators and freezers. It appears that the weight of foam exceeds by 100% the calculated weight of foam using the reported thickness of insulation and the volume of appliances produced by MTH. The inconsistency in the reported and calculated weight of foam has implications for the determination of CFC-11 consumption, IOC and cost-effectiveness.

2. The World Bank is in the process of obtaining the necessary information from the enterprise. The Sub-Committee on Project Review will be advised accordingly.

Lobato San Luis

3. The Secretariat has discussed with the World Bank the incremental capital costs of the revised proposal for Lobato San Luis. The cost of the high pressure dispenser has been adjusted to reflect the prevailing market price for this equipment. The cost of additional mixing head has been recognized as ineligible for funding. The incremental capital costs have been agreed between the Secretariat and the World Bank at the level of US \$183,085.

4. The data on production and CFC consumption date back to 1996. The Secretariat has requested information on the current production level of the enterprise. This information is required for calculation of the incremental operating costs and cost effectiveness as well as the indication of economic viability of the company. The World Bank reported to the 28th Meeting in its progress report on the Lobato project that the sub-grant agreement was not signed due to the unstable economic conditions of Lobato. The proposal submitted to the 32nd Meeting indicates that the enterprise is currently facing a sharp market reduction and is struggling to survive during the current economic crisis in Argentina.

5. On the issue of economic viability of the enterprise the World Bank advised the Secretariat that according to information provided by the Bank's financial agent in Argentina, the company does not have any kind of financial difficulty and will be able to complete the project.

6. The Secretariat has not received the required production data form the World Bank. The Sub-Committee on Project Review will be advised by the Secretariat accordingly.

**PROJECT EVALUATION SHEET
ARGENTINA**

SECTOR: Solvent ODS use in sector (1998): 90.8 ODP tonnes
 Sub-sector cost-effectiveness thresholds: CFC-113 US \$19.73/kg
 TCA US \$38.50/kg

Project Titles:

- (a) Change of technology for 3 out of 9 enterprises of the umbrella project for conversion from MCF used as solvent to aqua based cleaning (ARG/SOL/28/INV/91)

Project Data	Combined CFC-113 and TCA
Enterprise consumption (ODP tonnes)	
Project impact (ODP tonnes)	
Project duration (months)	
Initial amount requested (US \$)	0
Final project cost (US \$):	
Incremental capital cost (a)	
Contingency cost (b)	
Incremental operating cost (c)	
Total project cost (a+b+c)	
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US \$)	0
Cost effectiveness (US \$/kg.)	
Counterpart funding confirmed?	
National coordinating agency	
Implementing agency	IBRD

Secretariat's Recommendations	
Amount recommended (US \$)	
Project impact (ODP tonnes)	
Cost effectiveness (US \$/kg)	
Implementing agency support cost (US \$)	
Total cost to Multilateral Fund (US \$)	

PROJECT DESCRIPTION

Change of technology for 3 out of 9 enterprises of the umbrella project for conversion from MCF used as solvent to aqua based cleaning (ARG/SOL/28/INV/91) at Trosh S.A., Unisol S.A. and Grimoldi S.A.

1. This is an umbrella project for nine enterprises which was approved by the Executive Committee at its 28th Meeting. It was designed to phase out the consumption of 70.69 tonnes of 1.1.1 TCA used as cleaning solvent through conversion to aqueous technology. Three of the enterprises manufacture shoe soles. The other six enterprises manufacture metal products. The approved grant of US \$272,157, at the threshold limit, was to be used to meet most of the incremental capital costs for cleaning equipment. Incremental operating costs were not requested.
2. The project is being submitted for change of technology at the three shoe sole manufacturers. Decision 22/69 on guidelines for change of technology requires that all projects approved after adoption of the decision are to be implemented as approved, but that exceptions will be considered where the only other option would be cancellation. The revised proposal must be implemented within the approved level of funding. Such proposals are to be submitted for individual consideration.
3. Test on shoe soles using aqueous cleaning technology at the supplier's facility were unsuccessful. It is now proposed to provide to the three shoe sole enterprises cleaning machines of a different design that can use either iso-propyl alcohol or organic solvents as cleaning agents. Tests have been conducted with the proposed new equipment and were successful. The cost of the alternative machines is similar to the cost of the machines originally proposed. No change to the level of grant for the project is proposed. Details of the funding originally approved for the three enterprises are as follows:

<u>Company</u>	<u>TCA Consumption</u>	<u>Grant</u>
	<u>ODP tonnes</u>	<u>US \$</u>
Trosh S.A.	0.75	28,875
Unisol S.A.	1.070	41,195
Grimoldi S.A.	1.224	47,124

SECRETARIAT'S COMMENT AND RECOMMENDATION

COMMENT

1. The World Bank confirmed that phase-out at the three enterprises would not be able to proceed unless the proposed aqueous technology was changed. The Bank also confirmed that costs for the proposed alternative equipment were comparable to the equipment originally specified and that it did not provide any increase in production capacity. Since not all incremental capital costs (e.g. trials and training) and no incremental operating costs were requested, minor differences in equipment cost (e.g. reductions) would not affect the overall project cost.

RECOMMENDATION

1. Consistent with Decision 22/69 the project is submitted for individual consideration. The Secretariat recommends that the technology change be approved.