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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: ARGENTINA

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

PROJECT EVALUATION SHEET

COUNTRY OR REGION:	Argentina
PROJECT TITLE:	Conversion to non-CFC technology in the manufacture of flexible foam (slabstock) at: a) LIMANSKY b) SUENO ESTELAR S.A. and ESTELAR SAN LUIS
BUDGET:	a) Capital Costs: US \$533,000 ¹ Operating Costs: US \$43,000 b) Capital Costs: US \$745,000 ¹ Operating Costs: US \$ 63,000
INCREMENTAL COSTS:	a) US \$533,000 b) US \$745,000
ODS PHASE-OUT:	a) 95 MT b) 128.6 MT
COST EFFECTIVENESS ² :	a) US \$5.61 per kg. ODP saved b) US \$5.79 per kg. ODP saved
PROJECT DURATION:	Two years
IMPLEMENTING AGENCY:	UNDP
NATIONAL COORDINATING AGENCY:	Ozone Programme Office / National Institute of Industrial Technology
TECHNICAL REVIEW COMPLETED:	YES <u> X </u> NO <u> </u>

¹ Including a 10 per cent contingency fee.

² Determined as the ratio of incremental costs, excluding safety-related costs, to the estimated annual savings of ODP (\$/ODP kg.). For CFC-11 and CFC-12, ODS=OPD

SECRETARIAT'S COMMENTS

1. This project evaluation sheet covers two flexible polyurethane foam (slabstock) projects in Argentina (Limansky and Sueno Estelar). The companies to a variable degree started since 1993 to phase out CFC-11 using methylene chloride as a substitute. However, the emissions standards and regulations in Argentina do not make it feasible to use methylene chloride. The companies, thus, have chosen water blown technology supplemented with forced cooling to dissipate excess energy produced during the use of this technology.
2. The review of the projects posed several issues which were discussed with the implementing agency. These included:
 - Consumption data reported in the project documents which were at variance with data reported in the Argentina country programme, approved in December 1994. The total consumption reported in six projects received for the flexible foam sector exceeded the data in the country programme by as much as 80 per cent;
 - The extremely high cost of forced cooling systems in each project;
 - Calculation of cost-effectiveness based on foregone CFC-11 consumption.
3. The Technical Reviewer had indicated the feasibility of building the forced cooling equipment locally rather than importing them from abroad to reduce costs. The Secretariat supported this view since eight or more major companies would phase out by the same technology.
4. The projects are still under discussion between UNDP and the Secretariat and the outcome will be reported to the Project Review Sub-Committee.

PROJECT EVALUATION SHEET

COUNTRY OR REGION:	Argentina
PROJECT TITLE:	Conversion to non-CFC technology in the production of heat exchangers for mobile air conditioning systems at Sistenaire, S.A.
BUDGET:	US \$3,939,973
INCREMENTAL COSTS:	US \$3,939,973 ³
ODS PHASE-OUT:	60 ODP tonnes (indirect phase out)..
COST EFFECTIVENESS ⁴ :	N/A
PROJECT DURATION:	One year
IMPLEMENTING AGENCY:	World Bank
NATIONAL COORDINATING AGENCY:	OPROZ-INTI
TECHNICAL REVIEW COMPLETED:	YES <u>x</u> NO <u> </u>

SECRETARIAT'S COMMENTS

1. This project is to convert the existing tube and fin condenser and evaporator designs to parallel flow designs for MAC units using HFC-134a refrigerants. The current production plant is 44,000 MAC units per year.
2. The Secretariat engaged a sector expert to assess the eligibility and cost of the equipment requested for the conversion to HFC-134a refrigerant. The expert reviewed the project in light of the OORG MACs Working Group recommendations.
3. The project proposes to change the existing production of copper tubes/aluminium fins evaporators to aluminium tube/fins evaporators. The total cost for the conversion has been estimated at US \$931,250. Fifty per cent of this amount is being requested as eligible incremental costs, the remaining 50 per cent is acknowledged as technological advances, not an eligible incremental cost. Following similar approvals for Argentina and Venezuela, the Government of Argentina is requesting reduced funding of the evaporator line for this enterprise. However, it should be noted that the World

³ Including contingency (15 per cent) and Financial Agent Fee (3 per cent)

⁴ Determined as the ratio of incremental costs to the estimated annual saving of ODP (\$/ODPkg).
For CFC-11, ODS=ODP.

Bank technical reviewer stated that 'costs associated with the conversion of evaporators from copper to aluminium are not within the current OORG guidelines (Report 11, January 1995').

4. The project includes a washing machine (alkaline aqueous solution), to clean the inside and outside of the evaporator components to remove the flux residue, and a treatment process for the effluent. This system is to phase out the use of TCA. The cost of the degreaser, internal wash, external wash/oven is US \$281,000 and the cost of the waste treatment is US \$200,000. Information on the quantity of TCA to be phased out has been sought to determine the cost-effectiveness of this element of the project.

5. The project proposes to change the tube and fin condenser to parallel flow design, through a Nocolok process, at an estimated cost of US \$2,130,844. The Secretariat is still discussing with the World Bank level of funding of some of the equipment being requested.

6. The project also proposes to retool for the production of hose fittings for the new types of barrier hoses to be used with HFC-134a refrigerant, at a cost of US \$378,000. The World Bank states that 'retooling is required to adapt to HFC-134a hose fittings which are different from CFC-12 sizes. Technology changes, whether driven by environmental considerations or by simple technological advances, lead to the development and updating of recommendations by professional organisations such as SAE/ESO for purposes of establishing not only the minimum threshold of safety, but minimum universally accepted production specifications as well as interchangeability of parts'. The need to make some minor production changes to these components is not at issue. However, the Secretariat considers that hose gaskets, desiccants and expansion valves are not areas that require extensive cost increases.

SECRETARIAT'S RECOMMENDATIONS

7. The Secretariat is still discussing some outstanding issues with the World Bank. Advice concerning clarification of the issues and the outcome of any further consultations with the implementing agency will be provided to the Sub-Committee on Project Review no later than 7 days before its meeting, in accordance with its terms of reference.

PROJECT EVALUATION SHEET

COUNTRY OR REGION: Argentina

PROJECT TITLE: Elimination of CFC in the manufacture of domestic refrigerators at:
a) AUTOSAL
b) BRIKET
c) NEBA

BUDGET:

a)	Capital Costs:	US \$943,691 ⁵
	Operating Costs:	US \$46,656 (not requested)
b)	Capital Costs:	US \$747,400
	Operating Costs:	US \$213,477 (not requested)
c)	Capital Costs:	US \$721,070
	Operating Costs:	US \$183,613 (not requested)

INCREMENTAL COSTS:

a)	US \$972,000 ⁶
b)	US \$769,820 ²
c)	US \$742,702 ²

ODS PHASE-OUT:

a)	22 MT
b)	24 MT
c)	29 MT

COST EFFECTIVENESS⁷:

a)	US \$12.43 per kg. ODP saved
b)	US \$13.19 per kg. ODP saved
c)	US \$13.48 per kg. ODP saved

PROJECT DURATION: Two years

IMPLEMENTING AGENCY: World Bank

⁵ Including a 10 per cent contingency fee.

⁶ Including financial intermediary fee.

⁷ Determined as the ratio of incremental costs, excluding safety-related costs, to the estimated annual savings of ODP (\$/ODP kg.). For CFC-11 and CFC-12, ODS=OPD

NATIONAL COORDINATING AGENCY: Ozone Programme Office / National
Institute of Industrial Technology

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. This project evaluation sheet covers three projects on the conversion of domestic refrigerator manufacturing companies to non-CFC technology. The projects propose to replace the CFC-11 used as a blowing agent in the production of insulation foam with cyclopentane, and the CFC-12 used as a refrigerant with HFC-134a and in one enterprise with isobutane.
2. The proposals provide information on installed capacity, actual production and ODS consumption in the three enterprises which differ from those recorded in the Country Programme. This issue is being clarified with the World Bank.
3. The proposal includes: modification of existing equipment where applicable; procurement and installation of new equipment or machinery including safety measures for the use of the hydrocarbons and HFC-134a; modification of assembly lines; refrigerator redesign; testing and development of prototypes; and a training programme.
4. The incremental operating costs are not requested.
5. A technical review was provided by the World Bank.
6. Implementation of these projects will result in the phase-out of 75 ODP tonnes of CFCs.
7. The Secretariat reviewed the projects in light of similar projects approved by the Executive Committee and discussed with the World Bank the incrementality of all cost components and their amounts. As a result, some minor cost items were eliminated or reduced.
8. It should be noted that safety-related costs represent the following percentage of capital costs: AUTOSAL: 71%, BRIKET: 47%, NEBA: 45%.

SECRETARIAT'S RECOMMENDATIONS

9. The Secretariat recommends approval of the project proposals and approval of the following amounts inclusive of 3% financial intermediary fee:

AUTOSAL: US \$821,312

BRIKET: US \$783,820

NEBA: US \$706,961