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EXECUTIVE COMMITTEE
OF THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Twenty-seventh Meeting
Montreal, 24-26 March 1999

PROJECT PROPOSALS: ARGENTINA

This document consists of the comments and recommendations of the Fund Secretariat on the following projects:

Foam

- Phaseout of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam in panels for thermal insulation at Arneg Raffo — World Bank

Sterilants

- Elimination of CFCs in sterilization via ETO at Asisthos SRL — World Bank

PROJECT EVALUATION SHEET
ARGENTINA

SECTOR: FOAM ODS use in sector (1996): 142.8 ODP tonnes

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

Project Title:
Phase out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam in panels for thermal insulation at Arneg Raffo.

Project Data	**Rigid**
	Arneg Raffo
ODS phase-out (ODP tonnes)	75
Proposed project duration (months)	24
Incremental capital cost (US $)	440,000
- including contingency (%)	10
Incremental operational cost (US $)	261,000
Total project cost (US $)	701,000
Local ownership (%)	30
Export component (%)	0
Amount requested (US $) {Original}	193,950
{Revised}	
Cost effectiveness (US $/kg)	2.89
National Coordinating Agency	OPROZ
Implementing Agency	IBRD
Technical review completed?	Yes

Secretariat s Recommendations:	
Amount recommended (US $)	177,960
Project impact (ODP tonnes)	67
Cost effectiveness (US $/kg)	2.66
Implementing Agency support cost (US $)	23,135
Total cost to Multilateral Fund (US $)	201,095

PROJECT DESCRIPTION

Sector Information

1. Argentina's baseline consumption (average 1995-1997) of Annex A Group I substances reported to the Ozone Secretariat: 5,061.7 ODP tonnes.

2. The inventory of approved projects shows that as of November 1998 US $8.36 million had been approved for foam projects in Argentina to phase out 1,429.6 ODP tonnes. US $4.07 million had been disbursed and 368 ODP tonnes phased out.

3. The sector information for the project is based on 1992 data which currently may not be relevant to the determination of the impact of the project on Argentina's phase out programme.

Impact of the Project on the Country's Montreal Protocol Obligations

4. The project document stated that Arneg Raffo the project will eliminate the use of 67 ODP tonnes and as such is important in helping Argentina to meet the country's obligations with the Montreal Protocol. However, taken against the baseline, the 67 ODP tonnes represents the phase out of 1.3% of Argentina's baseline consumption of CFCs. The residual ODP resulting from the use of HCFC-141b is 8 tonnes ODP.

Phase out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam in panels for thermal insulation at Arneg Raffo.

5. Arneg Raffo will phase out the use of 67 tonnes of CFC-11. The production is to be converted to HCFC-141b as an interim technology, with later conversion to an ODS-free technology. The company operates two 100 kg/min low pressure machines installed in 1976 and 1981 and one 150 kg/min ICR low pressure machine installed in 1986. These machines are to be replaced with high pressure machines of equivalent capacities at US $110,000 each and US $130,000 for the 100 kg/min and 150 kg/min machines respectively. Other costs include trials (US $20,000) and technology transfer (US $20,000). Incremental operating costs amount to US $261,000. The costs of all three equipment installed in 1976, 1981 and 1986 have been discounted for old age. The foreign ownership portion has also been deducted from the project costs.

SECRETARIAT S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The costs of the Arneg Raffo project have been discussed between the Secretariat and the World Bank and agreed.

2. The sector information provided in the project document by World Bank is out of date. It will be more relevant if the information is based on more recent data and demonstrates the significance of foam sector projects on the country's ODS phase out.

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the Arneg Raffo project with the funding level and associated support cost indicated below.

Project Title	Project Cost US $	Support Cost US $	Implementing Agency
Phase out of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam in panels for thermal insulation at Arneg Raffo.	177,960	23,135	IBRD

2. The Executive Committee may wish to request the implementing agencies when preparing projects for the country to provide data in the sector background information that demonstrates the relationship of the ODS phased out in projects in the sector with the country's overall ODS phase out programme or its obligations under the Montreal Protocol.

PROJECT EVALUATION SHEET
ARGENTINA

SECTOR: STERILANT ODS use in sector (1997): n.a.

Project Title:
Elimination of CFCS in sterilization via ETO at Asisthos S.R.L.

Project Data	**CFC-12**
	Asisthos
ODS phase-out (ODP tonnes)	20.69
Proposed project duration (months)	18
Incremental capital cost (US $)	590,642
- including contingency (%)	10
Incremental operational cost (US $)	(64,382)
Total project cost (US $)	526,260
Local ownership (%)	100
Export component (%)	N/A
Amount requested (US $) {Original}	526,260
{Revised}	
Cost effectiveness (US $/kg)	25.44
National Coordinating Agency	Ozone Programme Office
Implementing Agency	World Bank
Technical review completed?	Yes

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

Elimination of CFCs in sterilization via ETO at Asisthos S.R.L.

1. Asisthos S.R.L., a company located in San Martin, Provincia de Buenos Aires, Republic of Argentina, provides sterilization services to laboratories, pharmaceutical companies, hospitals, and other medical-related industries. Its current sterilization process uses 88 percent CFC-12 blended with 12 percent ethylene oxide. It is proposed to convert the sterilisation process to the use of 100% ethylene oxide as the sterilising gas.

2. It is stated in the project document that the company commenced operations in 1993 and installed the last of the three sterilisers now in use in May 1995. The total capacity of the three sterilisers is 7.2 m^3. It is proposed to replace them with a single 10.1 m^3 sterilization unit costing $299,250. The larger unit provides the same total sterilising capacity since the new sterilisation process takes 40 percent longer per cycle. Pure ethylene oxide is highly toxic and flammable. Safety devices, ventilation and air conditioning were included in the original project proposal at a cost of $235,186. Technical assistance is sought to qualify the new facility at a cost of US $16,761. Incremental operating savings of US $64,382, calculated over an 18 month period, were deducted from the project cost for a proposed total of $526,260. This represents a cost-effectiveness of US $25.44/kg for the project as submitted.

3. Since the company is providing a service, the quantity of CFC-12 consumed is dependent on the volume of the company's business. Figures for the volume of product sterilised in 1996 and 1997 are given, together with the corresponding level of CFC-12 consumption. The CFC-12 consumed in the12 month period July1997-July 1998 is indicated as 20.69 ODP tonnes, and this is the figure used as the consumption to be phased out (the project was prepared in August 1998). It is indicated in the project document that this phase out will assist Argentina to meet the 50 percent reduction in consumption required by 2005.

SECRETARIAT S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. This is the first project in a new sub-sector, namely sterilants. One project involving sterilisation, for Hindustan Syringe in India, was approved at the 13th Meeting, but it was submitted as a solvent project. The cost effectiveness of that project was US $14.80/kg, however the application and the replacement technology were different and no safety costs were involved (there were no cost-effectiveness thresholds prior to the 16th Meeting). There is no information in the Argentina country programme about possible consumption for sterilants.

2. The 40 percent increase in size of the new sterilising chamber has been proposed to compensate for the 40 percent increase in the length of time it will take to complete each sterilising cycle. This will provide the same single shift sterilising capacity as the baseline equipment, when the steriliser is fully utilised. Prior to project preparation, the baseline equipment was being used at 68 percent of its capacity.

3. The range of technology options for replacement of CFC-12-based sterilisation are well established. The option chosen is a common one in contract sterilisation, because the gases used (ethylene oxide and nitrogen) are relatively cheap (about US $7.00/kg). Because ethylene oxide is highly flammable as well as toxic, safety measures are required, not unlike those used in hydrocarbon refrigeration, leading to high capital costs.

4. The Fund Secretariat explored with the World Bank an alternative technology which used a mixture of ethylene oxide and HCFCs 124 and 125 as the sterilising gas. This gas can be used as a drop-in with little or no modification to existing equipment. It is used extensively in developed countries to avoid the capital costs of equipment replacement, especially in small installations which use less gas. However the replacement gas costs around US $18/kg, compared to US $3.40/kg for the CFC-12/EO mixture now used, giving annual incremental operating costs of close to US$500,000. For this reason the drop-in technology option was not pursued.

5. The Secretariat also discussed the eligibility and cost of the specific safety measures requested. For instance, the original project proposal requested cost for an explosion-proof goods lift. It was subsequently determined that the lift was not required to be explosion proof and was not eligible for funding. The relevant costs were deleted by the World Bank.

6. The sterilising equipment proposed is of equivalent capacity to the baseline, however the facility is being extended to accommodate the new steriliser. The new facility will provide around five times the area available in the old plant for preparation and “preconditioning” of the goods to be sterilised and for the aeration chamber where they are unpacked afterwards. While the civil works are being funded by the enterprise, safety costs are being sought for the ventilation/atmosphere control and other electrical equipment in these rooms, as well as the gas storage area, to a total of some US $200,000. US National Fire Protection Association standards have been quoted as the reference for the installation. The requirements emanating from these standards and the resulting incremental costs are still being discussed with the World Bank. The results of the discussions will be reported to the Sub-committee on Project Review.

7. Incremental operating savings of US $40,593 per year are reported in the proposal. The World Bank has proposed that the total incremental operating savings be calculated on the basis of an 18 month period. Consideration might need to be given to whether there should be any variation to the four year period originally used for calculation of incremental operating costs and savings, and still used in the aerosols, halon and solvents sectors and for the flexible slabstock foam sub-sector.

RECOMMENDATION

1. The Executive Committee might consider the duration of incremental operating savings that should be taken into account in this project and whether a cost–effectiveness threshold should be established. Subject to its conclusions and the advice to be provided by the Secretariat on outstanding cost and eligibility issues which are still under discussion with the World Bank, the Committee might consider how it wishes to proceed.