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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Thirty-fourth Meeting  
Montreal, 18-20 July 2001

### **PROJECT PROPOSALS: ARGENTINA**

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

#### Foam:

- Conversion from CFC-11 to HCFC-141b in the manufacture of rigid foam insulation panels at Frio Star UNDP
- Phaseout of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at 4 foam manufacturers (umbrella) UNDP

#### Fumigant:

- Methyl bromide phase-out in tobacco and non-protected vegetable seedbeds (first tranche) UNDP

**PROJECT EVALUATION SHEET  
ARGENTINA**

SECTOR: Foam ODS use in sector (2000): 899 ODP tonnes  
Sub-sector cost-effectiveness thresholds: Rigid US \$7.83/kg

**Project Titles:**

- (a) Conversion from CFC-11 to HCFC-141b in the manufacture of rigid foam insulation panels at Frio Star  
(b) Phaseout of CFC-11 by conversion to HCFC-141b technology in the manufacture of rigid polyurethane foam at 4 foam manufacturers (umbrella)

Project Data	Rigid	
	Frio Star	Umbrella 4
Enterprise consumption (ODP tonnes)	21.00	61.00
Project impact (ODP tonnes)	18.90	54.90
Project duration (months)	30	36
Initial amount requested (US \$)	147,987	371,514
Final project cost (US \$):		
Incremental capital cost (a)	120,000	341,000
Contingency cost (b)	12,000	34,100
Incremental operating cost (c)	20,692	97,286
Total project cost (a+b+c)	152,692	472,386
Local ownership (%)	100%	100%
Export component (%)	0%	0%
<b>Amount requested (US \$)</b>	147,987	352,896
Cost effectiveness (US \$/kg.)	7.83	6.43
Counterpart funding confirmed?	Yes	Yes
National coordinating agency	OPROZ	
Implementing agency	UNDP	

<b>Secretariat's Recommendations</b>		
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 2000	Not Available ODP tonnes
- Baseline consumption of CFCs in foam sector	2,100.00 ODP tonnes
- Consumption of CFCs in foam sector in 2000	898.77 ODP tonnes
- Funds approved for investment projects in foam sector as of end of 2000	US \$10,703,594.00
- Quantity of CFC to be phased out in investment projects in the foam sector as of end of 2000	1,784.30 ODP tonnes
- Quantity of CFC phased out from approved investment projects in the foam sector as of end of 2000	913.00 ODP tonnes
- Quantity of CFCs in approved investment projects in the foam sector not yet completed as of end of 2000	871.30 ODP tonnes
- Quantity of CFCs remaining to be phased out in the foam sector as of end of 2000	25.47 ODP tonnes

### Rigid Foam

1. Two projects with total ODS consumption of 82 tonnes including an umbrella project for four enterprises are being submitted to the 34<sup>th</sup> Meeting. Analysis of the consumption data shows that the consumption of CFC to be phased out in the two projects would exceed the remaining consumption in the sector by about 57 tonnes. UNDP has been requested to provide a clarification for this ODS consumption situation.

#### Frio Star

2. Founded in 1993, Frio Star manufactures polyurethane insulation panels for general building and cold storage. Currently the enterprise is blending CFCs in-house because as its suppliers no longer preblend CFCs. Frio Star consumed 21 ODP tonnes of CFC-11 in 2000 and intends to phase out the use of 18.9 ODP tonnes of CFC-11 by converting to HCFC-141b interim technology (the duration of the interim step was not provided in the report). The likely permanent solution is to convert to liquid HFCs (HFC-245fa).

3. This company uses three ICR low-pressure dispensers (without temperature control) with capacities of 80 kg/min, 100 kg/min, and 150 kg/min. The years of purchase are 1994, 1996, and 1999 respectively. Based on the purchase dates of the dispensers, only the 80 kg/min low-pressure dispenser is eligible for replacement under Multilateral Fund guidelines. The purchase of a 100 kg/min dispenser (US \$100,000) is requested to replace the 80 kg/min dispenser during the conversion. Additional costs of conversion include training and technical assistance (US \$30,000). The incremental capital cost is US \$143,000 (with 10% contingency) and the incremental operating cost is US \$20,692 resulting in a total project cost of US \$163,692.

Rigid Umbrella 4 Enterprises: Artestamp, Pasissan, Forever, Termica

4. UNDP reported that all of the enterprises were established prior to 1987. They produce a variety of rigid foam products for insulating applications. The consumption of CFC-11 (1998-2000) and the baseline equipment of the individual enterprises are provided in Table 1 below. The four enterprises will phase out a total of 54.9 ODP tonnes of CFC-11 through conversion to HCFC-141b technology as an interim step for 1-2 years. A likely final step will be converting to HFC formulations.

5. Artestamp and Pasissan own one low-pressure dispenser each of 15 kg/min and 60 kg/min respectively. Forever owns a 60 kg/min low-pressure dispenser and two sprayfoam dispensers of 12 kg/min each. Termica operates two sprayfoam dispensers of 12 kg/min and 7 kg/min. All of the equipment was purchased between 1985 and 1995.

6. The request includes equipment retrofitting and replacement costs amounting to US \$335,000 for all the enterprises combined. The amount of US \$31,000 will be deducted to account for the old age of some of the baseline equipment. Trials, technology transfer, and training total US \$37,000. Other costs including the incremental, operating, and total project costs are listed below in Table 1.

Justification for conversion to HCFC-141b technology

7. The following justification has been provided for the use of HCFCs in the company. The use of HCFC-141b technology as an interim solution to phase out CFC-11 consumption was found to be the most feasible option for all these enterprises. Water-based formulations do not provide sufficient insulation properties for the specific applications of the companies and was therefore not considered a feasible option. HCFC-141b was found to be adequate to maintain insulation. Hydrocarbon technology was deemed much too costly due to limited grant availability.

8. The Government of Argentina has endorsed the use of HCFC by the companies.

Table 1. Profile of the 4 Enterprises

Enterprise and Date Established	CFC Used (1998-2000)	Impact ODP Eliminated (t/y)*	ICC** US \$	IOC*** US \$	Total Project Cost US \$	Amount Requested US \$	Cost Effectiveness US \$/kg
<b>GROUP PROJECT 4 ENTERPRISES</b>							
Artestamp 1955	11	9.9	33,000	20,520	56,820	56,820	5.74
Pasissan 1980	12	10.8	58,000	22,708	68,908	68,908	6.38
Forever 1986	10	9.0	168,000	21,660	189,960	70,470	21.11
Termica 1984	28	25.2	113,000	50,626	174,926	174,926	6.94
<b>SUB-TOTAL</b>	<b>61</b>	<b>54.9</b>	<b>372,000</b>	<b>115,514</b>	<b>490,614</b>	<b>371,514</b>	<b>6.77</b>

\* tonnes per year \*\*incremental capital cost \*\*\*incremental operating cost

**SECRETARIAT’S COMMENTS AND RECOMMENDATIONS**

**COMMENTS**

9. The Secretariat and UNDP have discussed the projects and agreed on their eligible grants as follows:

Frio Star	US \$147,987
Umbrella (4 enterprises)	US \$352,896

**RECOMMENDATIONS**

10. The analysis of Argentina’s ODS consumption data shows some discrepancies for which reason the consumption of the enterprises in the project cannot be ascertained.

11. The Secretariat did not receive information from the Government of Argentina validating the CFC consumption. It suggested that the requirement be implemented for projects coming to the 35<sup>th</sup> Meeting, since the process for submission of projects to the 34<sup>th</sup> Meeting had already begun.

12. The projects are submitted for individual consideration in view of the discrepancies in the sector ODS consumption.

**PROJECT EVALUATION SHEET  
ARGENTINA**

SECTOR: Fumigant ODS use in sector (2000): 456.6 ODP tonnes

Sub-sector cost-effectiveness thresholds: n/a

**Project Title:**

(a) Methyl bromide phase-out in tobacco and non-protected vegetable seedbeds (first tranche)

<b>Project Data</b>	<b>Methyl bromide</b>
Enterprise consumption (ODP tonnes)	178.80
Project impact (ODP tonnes)	178.80
Project duration (months)	54
Initial amount requested (US \$)	11,487,214
Final project cost (US \$):	
Incremental capital cost (a)	
Contingency cost (b)	
Incremental operating cost (c)	
Total project cost (a+b+c)	5,000,000
Local ownership (%)	100%
Export component (%)	0%
<b>Amount requested (US \$)*</b>	500,000
Cost effectiveness (US \$/kg.)	
Counterpart funding confirmed?	Yes
National coordinating agency	OPROZ
Implementing agency	UNDP

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

\* First tranche

## **PROJECT DESCRIPTION**

### Methyl bromide phase-out in tobacco and non-protected vegetable seedbeds

13. Based on official data reported by the Government of Argentina for 1998, the main uses of methyl bromide (MB) in the country are: 330 ODP tonnes for strawberry, protected vegetables and cut flowers; 156 ODP tonnes for tobacco and open-field vegetable seedbeds; and 18 ODP tonnes for post-harvest uses.

14. The Government of Argentina is submitting a project to phase out 178.8 ODP tonnes of MB used in tobacco seedlings and non-protected vegetable seedbeds. This project is part of the national strategy for phasing-out all controlled uses of MB, except for critical uses, and quarantine and pre-shipment applications.

15. Currently, Argentina is implementing an investment project to phase out 330 ODP tonnes of MB in the strawberry, cut flower and greenhouse vegetable sector by 2005 (UNIDO, at a cost of US \$3,183,390); and a Phase I of an investment project for MB phase-out in post-harvest uses (World Bank, at a cost of US \$375,000). Phase II of the project will be submitted for consideration by the Committee once Phase I is completed.

16. The tobacco production area, located in the Northeast and Northwest of the country, has grown from 58,422 ha in 1994 to 79,015 ha 2000. In 1999, almost 42 per cent of tobacco products were exported to Article 2 countries. Tobacco is not exported by the farmers; farmers sell their tobacco to 13 companies who process the tobacco and export cigarettes and tobacco products.

17. Non-protected vegetables (tomatoes, peppers, eggplants, chillies and cantaloupe) are produced in the Northwest region of the country. The production systems for most open-field vegetables, especially tomatoes and peppers, require the establishment of seedbeds to provide seedlings for the crops. The soil for seedling production is treated with MB.

18. Almost all tobacco and open-field vegetable seedbeds are fumigated with MB to control weeds, nematodes and soil diseases.

19. The alternative technologies to replace MB in the production of tobacco seedlings are the floating and non-floating tray systems installed in micro-tunnels and alternative chemicals (metam sodium) in specific areas where the pest pressure allows its use. The selection of these technologies is based on the results of two demonstration projects, one for tobacco seedbeds (under UNDP work programme) and another for strawberry, cut flower and protected vegetable sectors (under UNIDO work programme).

20. The total capital cost of the project has been estimated at US \$11.95 million; the cost for technology transfer and training has been estimated at US \$3.64 million and the operating costs at US \$1.43 million (total cost of US \$17.02 million including a counterpart funding of US \$4.53 million). The estimated time for the implementation of the project is 4.5 years. The cost effectiveness of the project is US \$64.24/kg.

21. Argentina has issued legal norms related to MB including Decree No. 3489/58 (mandatory registration of trade, import and export of plant protection products including MB); Resolution No. 440/98 (procedures and criteria for registration of phytosanitary products); Resolution No. 20/96 (regulates the waste present in products treated with fumigants); Resolution No. 280/98 (bans use of MB in urban plague control campaigns); Disposition No. 28/99 (establishes the MB Consultative Group). In addition, this project will be accompanied by a package of policy measures to ensure that the MB phased-out by this project will not be re-introduced at a later stage.

22. The project will be implemented by UNDP under national coordination by the Ozone Office, in close cooperation with National Institute of Agricultural Technology.

## **SECRETARIAT'S COMMENTS AND RECOMMENDATION**

### **COMMENTS**

23. UNDP informed the Secretariat that about 42 per cent of the tobacco produced in Argentina is exported to non-Article 5 countries. However, farmers cultivate the tobacco and sell it to nationally-owned industries who export it. The percentage of export to non-Article 5 countries has not been taken into consideration in the calculation of the project incremental costs.

24. Implementation of this project will lead to the phase out of all controlled uses of MB, by end-2006 except for 18 ODP tonnes in post-harvest uses, and for critical, quarantine and pre-shipment applications.

25. The Secretariat pointed out the high sensitivity of the methodology used for calculating the operating cost of the project, whereby any small change in the amounts of fertilisers, labour, trays and their costs will result in major changes in the overall calculation. The capital cost of the project was calculated considering the price of the polystyrene tray at US \$1.17/unit; however, the price of similar trays in other approved projects (Brazil and Malawi) was below US \$1.00/unit, and if the trays are produced locally, these could be reduced to US \$1.00/unit. Using a value of US \$1.00/tray, the cost of the project would be reduced by US \$0.86 million. The ratio of the total labour associated with the traditional seedbeds (using MB) compared to the floating tray system used in the calculation of the operating cost of the project was 1.7 to 1; however, a ratio of 3 to 1 has been reported for a medium-size farm in a case study on tobacco seed-beds in Argentina. By applying a 3 to 1 ratio, operating savings of over US \$5 million would be realised.

26. The Secretariat considered that the cost of the training programme was excessive (US \$3.64 million) and sought clarification on the need for four training leaders (US \$2,000/month each) and 50 extensionists; US \$433,000 for training programmes, workshops and training material; and US \$591,000 for transportation. UNDP reported that the project will have to train 24,400 farmers working in farms which are located under very different climates; the project covers five different crops, with a production season of almost 12 months for some

vegetables and 5 months for tobacco. The training leaders will be contracted for 45 months (82 per cent of the time) and extensionists will be contracted for only 5 months per year (counterpart funding will cover the additional time which is necessary to transfer the technology and train farmers).

27. The Fund Secretariat and UNDP being aware of the sensitivity of the methodology used for calculating operational costs, agreed to determine the total project cost on the basis of similar, but more cost-effective, phase out investment projects in tobacco seedlings in other countries. Therefore, the total project cost was agreed at US \$5 million, which covers the equipment, training and technical assistance requirements for achieving the complete phase out of MB in tobacco and horticulture sectors in Argentina.

28. UNDP is assisting the Government of Argentina in drafting a proposal for an agreement between the Government and the Executive Committee with the commitments proposed and action plan for the phase out of MB in Argentina. The draft agreement will be finalised prior to the 34<sup>th</sup> Meeting of the Committee.

#### **RECOMMENDATION**

29. This project is submitted for individual consideration by the Executive Committee.

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