

Distr.
LIMITED

UNEP/OzL.Pro/ExCom/18/38
31 Octobre 1995

ORIGINAL: ENGLISH

Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

Eighteenth Meeting
Vienna, 22-24 November 1995

PROJECT PROPOSALS: ROMANIA

This document includes the Comments and Recommendationf from the Fund Secretariat on the following projects:

Aerosol

- Investment project for phasing out CFCs at Farmec, S.A. UNIDO

Refrigeration

- Phasing out ODS at the Domestic Refrigeration Factory Arctic S.A UNIDO

**PROJECT EVALUATION SHEET
ROMANIA**

SECTOR: AEROSOL ODS use in sector (1994): 730 ODP tonnes

Sub-sector cost-effectiveness threshold: Hydrocarbons US \$4.40/kg

Project Title: Investment project for phasing out CFCs at Farmec, S.A.*

Project Data	Farmec
ODS phase-out (ODP tonnes)	730 tonnes
Proposed project duration (Yrs)	2
Incremental capital cost (US \$)	1,697,550
Contingency (%)	10
Incremental operational cost (US \$)	(648,849)
Total project cost (US \$)	1,048,701
Local ownership (%)	100
Export component (%)	-
Amount requested (US \$) {Original	1,443,417
{Revised	1,048,701
Cost effectiveness (US \$/kg)	1.44/kg
National Coordinating Agency	Ministry of Water, Forest and Environmental Protection
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	895,880
Project impact (ODP tonnes)	730
Cost effectiveness (US \$/kg)	1.22
Implementing Agency support cost (US \$)	116,464
Total cost to Multilateral Fund (US \$)	1,012,344

* New proposal to the 18th Meeting

PROJECT DESCRIPTION

1. Farmec is the main producer of aerosols in the country, accounting for 97% of the total aerosol production.
2. Farmec manufactures different size presentations of deodorant sprays (7,240,000 cans/year), hair sprays (800,000 cans/year) and insecticides (2,000,000 cans/year). The present aerosol filling plant is located in the center of a populated town, and is not suitable for filling and storing flammable propellants. The current filling lines are old and not suitable for conversion to hydrocarbon aerosol grade propellant (HAP). Due to the current situation and, taking into consideration that the enterprise intends to expand its production capacity, the enterprise decided to transfer the production line to a new location out of the town.
3. The enterprise will convert to HAPs technology, using the open air filling room method. Conversion entails installation of two automatic pneumatic filling machines with water bath for testing filled cans, two open air filling rooms with gassing machines and proper ventilation, HAP storage and purification system, and a fire control systems including a water reservoir, pumps, hoses and fire extinguishers. Technical assistance will be provided for performance and supervision of engineering designs, equipment installation and commissioning of the plant, training of personnel in production, quality control and safety procedures and production trials.
4. The enterprise will finance costs associated with engineering designs for the completion of the plant facilities and LPG storage and purification systems, additional civil construction and related works to allow for the use of flammable products in the plant.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The following issues were addressed by UNIDO: (i) difference in costs of same pieces of equipment requested compared with other projects, (ii) justification for the request of LPG purification system since no information was provided regarding the quality of available LPG, and (iii) rationale for calculating operational savings due to the use of a cheaper propellant and associated changes in product formulation.
2. UNIDO reviewed the proorsal according to the comments by the Secretariat. The adjusted capital cost of conversion is US \$1,576,550 including 10% contingency, and the operational savings (NPV) for four years is US \$680,670.

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the project with associated support costs at the funding level shown in the table below:

Project	Project Cost US \$	Support Cost US \$	Implementing Agency
Investment project for phasing out CFCs at Farmec, S.A.	895,880	116,464	UNIDO

**PROJECT EVALUATION SHEET
ROMANIA**

SECTOR: REFRIGERATION ODS use in sector (1993): 264 ODP tonnes

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

Project Title: Phasing out ODS at the Domestic Refrigeration Factory Arctic S.A. *

Project Data	Domestic Refrigeration
	Arctic
ODS phase-out (ODP tonnes)	206
Proposed project duration (Yrs)	1.5
Incremental capital cost (US\$)	717,000
Contingency (%)	0
Incremental operational cost (US\$)	500,000
Total project cost (US\$)	1,217,000
Local ownership (%)	100
Export component (%)	20
Amount requested (US\$) {Original	2,757,713
{Revised	1,145,300
Cost effectiveness (US\$/kg)	5.56
National Coordinating Agency	Ministry of Environment
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	1,095,300
Project impact (ODP tonnes)	206
Cost effectiveness (US \$/kg)	5.32
Implementing Agency support cost (US\$)	142,389
Total cost to Multilateral Fund	1,237,689

* New proposal to 18th Meeting.

PROJECT DESCRIPTION

Phasing out ODS at the Domestic Refrigeration Factory Arctic S.A

1. ODS consumption in the domestic refrigeration sector is 264 ODP tonnes. There are two domestic refrigerator manufacturers in Romania. Arctic S.A. is the largest producer of domestic refrigerators and freezers. The current annual output is 370,000 units. 20 per cent of refrigerators are exported to non-Article 5 countries.
2. The company has already implemented conversion from CFC-12 to the HFC-134a refrigerant and from CFC-11 to the HCFC-141b blowing agent. Under the project submitted, the company will eliminate total consumption of 206 ODP tonnes. The company has already purchased and put into operation all the necessary equipment. Production of non-CFC refrigerators and freezers has started in 1995.
3. The project proposal requests funding of recent activities undertaken by the company to convert to non-CFC technologies on retroactive basis.
4. Conversion to HFC-134a involved replacement of refrigerant charging boards and leak detectors, and retrofits of existing vacuum system.
5. Conversion to HCFC-141b entailed the replacement of low pressure foaming machines with high pressure machines.
6. The company requested US \$1,087,106 in incremental operating costs for 6 months. Since the company produces HFC-134a based compressors for its own use, and since the refrigerator units produced are of small size, it was determined that a sum of US \$500,000 should compensate for six months of incremental operating costs.
7. At the time when Arctic started to work on conversion to HCFC-141b based transitional technology, cyclopentane based technology was not available. Arctic recognizes the transitional nature of HCFC technology. Presently, Arctic is considering a second stage conversion to cyclopentane in foam blowing operations and to isobutane as a refrigerant. Arctic also understands and accepts that the costs associated with that subsequent technology change, which are estimated at US \$2 million, will be funded from its own resources.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The chosen technologies are proven. The choice of interim HCFC technology in foaming operations is justified.
2. The Secretariat discussed with UNIDO the eligibility and incrementality of all cost items. The project budget has been adjusted accordingly.
3. The Fund Secretariat notes that the 13 per cent support costs for this project amounts to US \$142,389. For large retroactively funded projects of this nature, where project development and supervision requirements are significantly reduced, consideration might be given to establishing a lower percentage figure for support costs.

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the project with associated support costs at the funding level shown in the table below:

Project	Project Cost US \$	Support Cost US \$	Implementing Agency
Phasing out ODS at the Domestic Refrigeration Factory Arctic S.A	1,095,300	142,389	UNIDO