UNITED NATIONS **EP**

United Nations Environment Programme

Distr.
LIMITED

UNEP/OzL.Pro/ExCom/26/23
12 October 1998

ORIGINAL: ENGLISH

Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol
Twenty-sixth Meeting
Cairo, 11-13 November 1998

PROJECT PROPOSALS: ALGERIA

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

Foam

- Phaseout of CFC-11 in the manufacture of flexible polyurethane foam using methylene chloride technology at ETS Maghreb Mousse — UNIDO

Refrigeration

- Replacement of CFC-12 with HFC-134a for domestic refrigeration at Enapem — UNIDO

PROJECT EVALUATION SHEET
ALGERIA

SECTOR: FOAM ODS use in sector (1996): 24 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible Slabstock US $ 6.23/kg

Project Title:
Phase out of CFC-11 in the manufacture of flexible polyurethane foam using methylene chloride technology at ETS Maghreb Mousse

Project Data	**Flexible Slabstock**
	ETS Maghreb Mousse
ODS phase-out (ODP tonnes)	24
Proposed project duration (months)	12
Incremental capital cost (US $)	104,500
- including contingency (%)	10
Incremental operational cost (US $)	(8,008)
Total project cost (US $)	96,492
Local ownership (%)	100
Export component (%)	0
Amount requested (US $) {Original}	96,492
{Revised}	
Cost effectiveness (US $/kg)	4.02
National Coordinating Agency	Ministère de l'intérieur, des Collectivités et de l'environnement
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations:	
Amount recommended (US $)	96,492
Project impact (ODP tonnes)	24
Cost effectiveness (US $/kg)	4.02
Implementing Agency support cost (US $)	12,544
Total cost to Multilateral Fund (US $)	109,036

PROJECT DESCRIPTION

Phase out of CFC-11 in the manufacture of flexible polyurethane foam using methylene chloride technology at ETS Maghreb Mousse

1. The CFC consumption in the polyurethane foam sector in Algeria in 1996 was reported to be 400 ODP tonnes, while the consumption for the sector in 1997 according to the report on the progress of implementation of the country programme was 560 tonnes. Breakdown by sub-sector was not provided. However, the flexible foam sector is significant, consisting of about 40 manufacturers. The total installed capacity of flexible slabstock foam is reported to be 40,000 tonnes per year with about 63% capacity utilization. Five flexible slabstock polyurethane foam projects for the phase out of 207 ODP tonnes of CFC-11 have, so far, been approved for the country.

2. The project document indicates that, if the project is implemented as scheduled, 24 tonnes CFC-11 eliminated from the foam sector, which currently constitutes 34% of the country's CFC consumption, will contribute to the country's 1999 CFC consumption freeze.

3. ETS Maghreb Mousse started foam production in 1985 with installed capacity of 1,400 tonnes/year. It produced 375 tonnes of low density flexible slabstock foam in 1997/1998, using 24 tonnes CFC-11. It operates a continuous OMS machine type MRF 160E said to have a useful life of at least 10 years after conversion.

4. The company will convert its production to the use of methylene chloride. The capital cost of conversion includes the cost of a new methylene chloride metering system (US $15,000), upgrade of ventilation system (US $50,000), safety devices (US $5,000), technology transfer & training (US $15,000), commissioning & start-up (US $10,000). There are incremental operational savings of US $8,008.

5. UNIDO indicated as part of the project implementation process, that the list of equipment to be replaced and destroyed or rendered unusable (indicating the relevant model and serial numbers) will be prepared after the bidding process for purchase of new equipment. The list will be attached to the completion report with relevant certification of the undertaken destruction actions.

SECRETARIAT COMMENTS AND RECOMMENDATION

COMMENTS

1. The inadequacies in the project document which included omission of the date of installation of the foam equipment, and incomplete project monitoring milestones were rectified by UNIDO.

2. The project costs have been agreed between UNIDO and the Secretariat.

RECOMMENDATION

1. The Fund Secretariat recommends blanket approval of the ETS Maghreb Mousse 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 in the manufacture of flexible polyurethane foam using methylene chloride at ETS Maghreb Mousse.	96,492	12,544	UNIDO

PROJECT EVALUATION SHEET
ALGERIA

SECTOR: REFRIGERATION ODS use in sector (1996): 762 ODP tonnes

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

Project Title:

Replacement of CFC-12 with HFC-134a for domestic refrigeration at ENAPEM

Project Data	**Domestic**
	ENAPEM
ODS phase-out (ODP tonnes)	12.8
Proposed project duration (months)	12
Incremental capital cost (US $)	78,430
- including contingency (%)	10
Incremental operational cost (US $)	88,902
Total project cost (US $)	167,332
Local ownership (%)	100
Export component (%)	0
Amount requested (US $) {Original}	167,332
{Revised}	
Cost effectiveness (US $/kg)	13.07
National Coordinating Agency	Ministère de l'Intérieur, des Collectivités Locales et de l'Environnement
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations:	
Amount recommended (US $)	167,332
Project impact (ODP tonnes)	12.8
Cost effectiveness (US $/kg)	13.07
Implementing Agency support cost (US $)	21,753
Total cost to Multilateral Fund (US $)	189,085

PROJECT DESCRIPTION

Replacement of CFC-12 with HFC-134a for domestic refrigeration at ENAPEM

1. The Algerian Country Programme identifies Refrigeration Sector as representing 36% of the national consumption of ODS, representing 762 tonnes of CFCs consumed in 1991.

2. The refrigeration industry of Algeria consists of two domestic refrigerator manufacturers (ENIEM and ENAPEM). ENIEM phased out its CFC consumption of 425 ODP tonnes in 1996, leaving a residual consumption in the sector of 445 ODP tonnes (145 ODP tonnes in commercial and 300 ODP tonnes in domestic refrigeration servicing).

3. The project document states that "taking into consideration all the projects approved so far for Algeria (1,014 tonnes ODP to be phased-out), this project (12.8 ODP tonnes to be phased out) will not only contribute to the 1999 freeze target but will also continue to expand this target."

4. ENAPEM is a 100% state-owned company operating in the manufacture and sale of domestic refrigerators and other household appliances. The refrigerator factory was purchased in 1992 from Arcelik (Turkey) and started production in January 1993. The plant assembles and charges refrigerators with CFC-12 refrigerant whose parts are being purchased as kits, including compressors and CFC-11 based foam insulated cabinets from Arcelik and Profilo (Turkey). The enterprise is not involved in foam operation. 44,230 units were assembled in 1997.

5. ENAPEM plans to replace the use of CFC-12 with HCFC-134a by the end of 1999.

6. The company currently owns a charging board, six charging machines, nine vacuum pumps, one leak detector, five pump-style leak detectors, and compressors.

7. The requested cost is for equipment such as: one HFC-134a charging board, six portable semi-automatic HFC-134a charging machines, five manual leak detectors, one HFC 134a leak detector, testing equipment modification of nine HFC-134a vacuum pumps, as well as for material for prototyping. The budget includes general consultancy and redesign of refrigerator models.

8. The old equipment or the components that are replaced will be destroyed or rendered unusable. A certification of the destruction would be issued by an independent international inspection agency.

9. The incremental operating costs are requested for a six-month period to cover the incremental costs associated with HFC-134a – based kits and components.

SECRETARIAT'S COMMENT AND RECOMMENDATION

COMMENT

1. The Fund Secretariat discussed with UNIDO the ENAPEM project proposal. The requested costs are recognised as eligible for funding.

RECOMMENDATION

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

Project Title	Project Cost US $	Support Cost US $	Implementing Agency
Replacement of CFC-12 with HFC-134a for domestic refrigeration at ENAPEM	167,332	21,753	UNIDO