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

Eighteenth Meeting
Vienna, 22-24 November 1995

PROJECT PROPOSALS: TUNISIA

This document includes the Comments and Recommendations from the Fund Secretariat on the following project:

• Umbrella project to phase out ODS at 6 small refrigerator manufacturers	UNIDO

PROJECT EVALUATION SHEET
TUNISIA

SECTOR: **Refrigeration** ODS use in sector (1993): 155 ODP tonnes

Sub-sector cost-effectiveness thresholds: Domestic 13.76 US $/kg
Commercial 15.21 US $/kg

Project Titles:
Umbrella project to phase out ODS at 6 small refrigerator manufacturers*

Project Data	**Umbrella project to phase eout ODS at 6 small refrigerator manufacturers**
ODS phase-out (ODP tonnes)	78.5
Proposed project duration (Yrs)	1
Incremental capital cost (US$)	482,341
Contingency (%)	10
Incremental operational cost (US$)	282,216
Total project cost (US$)	764,557
Local ownership (%)	100
Export component (%)	0
Amount requested (US$) {Original	1,088,932
{Revised	764,557
Cost effectiveness (US$/kg)	12.41
National Coordinating Agency	Agence Nationale de la Protection de l'Environment
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US $)	764,557
Project impact (ODP tonnes)	78.5
Cost effectiveness (US $/kg)	9.74
Implementing Agency support cost (US$)	99,392
Total cost to Multilateral Fund	863,949

* New proposal to 18th Meeting

PROJECT DESCRIPTION

1. The project will phase out the use of CFCs in the production of domestic refrigerators at five manufacturers and one commercial refrigerator manufacturer.

2. UNIDO reported that the implementation of the project will complete the phase-out of CFCs in the entire domestic refrigeration sector.

3. GAN, SOTUFEM, SGE, SOTACER and ABS Electro produce domestic refrigerators. CSE/Saten produces commercial refrigerators, cold stores and refrigerated counters. SGE, SOTACER and ABS take delivery of refrigerators in kit form (all components including compressors) and assemble and charge them in the factories. GAN and SOTUFEM have refrigerator production lines.

4. Due to the small size of the companies, they have chosen HCFC141b as the substitute for CFC-11. However, the companies are not requesting equipment for the production of insulating foam.

5. For the new refrigerant, the companies have included new charging boards and vacuum pumps in their investment costs. In addition each company is requesting one recovery and recycling machine.

6. Incremental operating costs for six month duration were calculated for both the refrigerant and foam component, where applicable.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Secretariat drew UNIDO's attention to the fact that one of the companies (ABS Electro) imports ready-assembled refrigerator shells from Arcelik (Turkey) and was thus ineligible to receive incremental operating costs except those associated with HFC 134a

2. The Secretariat also requested UNIDO to delete all operating costs of SOTACER except for those associated with HFC 134a.

3. UNIDO adjusted project budget accordingly and is requesting the adjusted incremental operating costs for six months.

4. The cost effectiveness of individual companies is below the threshold value of US $13.76/kg.

RECOMMENDATIONS

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

Project	Project Cost US $	Support Cost US $	Implementing Agency
Umbrella project to phase out ODS at 6 small refrigerator manufacturers	764,557	99,392	UNIDO