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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Twenty-third Meeting
Montreal, 12-14 November 1997

PROJECT PROPOSALS: MOROCCO

This documents includes the comments and recommendations of the Fund Secretariat on the following project proposals:

Foam

• Phase out of CFC in the manufacture of flexible foam (slabstock) at Molen Industrie S.A.	UNDP
• Phase out of CFC in the manufacture of flexible foam (slabstock) at Richdor S.A.	UNDP
• Phase out of CFC in the manufacture of flexible foam (slabstock) at Mousse d'Or S.A.	UNDP
• Phase out of CFC in the manufacture of flexible foam (slabstock) at Sodiflex and Tiznit Plastic S.A.	UNDP
• Phase out of CFC in the manufacture fo flexible foam (slabstock) at Salidor S.A.	UNDP
• Phase out of CFC in the manufacture of rigid foam at Panaf Isolation S.A.	UNDP

PROJECT EVALUATION SHEET
MOROCCO

SECTOR: FOAM ODS use in sector (1994): 417 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible US $6.23/kg
Rigid US $7.83/kg

Project Titles:
(a) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Molen Industrie S.A.
(b) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Richdor S.A.
(c) Phase out of CFC in the manufacture of flexible foam (Slabstock) at MOUSSE D'OR S.A.
(d) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Sodiflex and Tiznit Plastic S.A.
(e) Phase out of CFC in the manufacture of flexible foam (Slabstock) at SALIDOR S.A.
(f) Phase out of CFC in the manufacture of rigid foam at PANAF Isolation SA

Project Data	**Flexible (Slabstock)**					**Rigid Foam**
	Molen Industrie	**Richdor**	**Mousse D'or**	**Sodiflex And Tiznit Plastic**	**Salidor**	**Panaf Isolation SA**
ODS phase-out (ODP tonnes)	9	10	45	85	48	17.5
Proposed project duration (months)	24	24	24	24	24	24
Incremental capital cost (US $)	40,700	40,700	619,140	619,800	617,600	126,500
- including contingency (%)	10	10	10	10	10	10
Incremental operational cost (US $)	33,600	51,700	(3,100)	(72,500)	(26,100)	38,900
Total project cost (US $)	74,300	92,400	616,040	547,300	591,500	165,400
Local ownership (%)	100	100	100	100	100	100
Export component (%)						
Amount requested (US $) {Original} {Revised}	56,070	62,300	280,350	529,500	299,000	137,000
Cost effectiveness (US $/kg)	6.23	6.23	6.23	6.23	6.23	7.83
National Coordinating Agency	Ministry of Trade, Industry and Crafts					
Implementing Agency	UNDP					
Technical review completed?	Yes	Yes	Yes	Yes	Yes	Yes

Secretariat's Recommendations:						
Amount recommended (US $)	56,070	62,300	Pending	Pending	Pending	137,000
Project impact (ODP tonnes)	9	10				17.5
Cost effectiveness (US $/kg)	6.23	6.23				7.83
Implementing Agency support cost (US $)	7,289	8,099				17,810
Total cost to Multilateral Fund (US $)	63,359	70,399				154,810

PROJECT DESCRIPTION

Foam Sector Profile

Sector ODS consumption (1994) reported in country programme	417 tonnes ODP
Most recent consumption data (no date given)	592 tonnes ODP
ODS to be phased out in approved projects (as at July 1997)	223 tonnes ODP
ODS to be phased out in current proposed projects	215 tonnes ODP
Latest (1995) CFC-11 consumption reported according to Art.7	460 tonnes ODP

(a) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Molen Industrie S.A.

(b) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Richdor S.A.

1. The two companies will convert from the use of CFC-11 in the manufacture of flexible foams for the shoulderpads industry (Molen) and the furniture and bedding markets(Richdor) to low index/additive (LIA) technology.

2. Molen Industrie has a locally built foaming machine during 1994/95 while Richdor has a Hennecke 150 low pressure machine (1991) with an output of 50 kg/min.

3. The capital cost of conversion at each enterprise includes one storage/metering system for additives (US $10,000), provision for safety equipment (US $10,000), trials, technology transfer and training (US $17,000). Incremental operating costs as indicated in the cover sheet are to be expected based on the introduction of a special additive and the increase of TDI consumption (more water and TDI reaction) combined with the replacement technology.

(c) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Mousse D'Or S.A.

(d) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Sodiflex and Tiznit Plastic S.A.

(e) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Salidor S.A.

4. The three companies will convert from the use of CFC-11 in the manufacture of flexible foam used for the furniture and bedding markets to liquid carbon dioxide technology (LCD).

5. Mousse D'Or S.A operates a Cannon Viking maxfoam 500 low pressure (1996) and a Hennecke 150 low pressure (1988) machines, with capacities of 250 kg/min and 50 kg/min, respectively. Sodiflex operates a Sunkist maxfoam low pressure machine (1994) with a capacity of 250 kg/min. Tiznit Plastic uses both a Sunkist box foam (1987) and a Cannon Viking maxfoam low pressure (1995) machines, with outputs of 70 kg/min and 240 kg/min, respectively.

6. The capital cost of conversion involves conversion of the production line (US $482,000), trials, technology transfer and training (US $35,000). A license fee including commissioning of LCD equipment at US $50,000 is also included. It is claimed that incremental operating costs will offset operating savings accruing from the use of the cheaper CO_2, by increased energy consumption, higher polyol and surfactant prices, use of nitrogen and higher maintenance costs.

Equipment or Components to be Destroyed or Rendered Unusable

7. Not applicable for any of the above projects.

(f) Phase out of CFC in the manufacture of rigid foam at PANAF Isolation SA

8. Panaf Isolation SA will phaseout the use of CFC-11 in the manufacture of rigid foam for sandwich panels for insulated refrigerated truck bodies to water and HCFC-141b interim technology. The enterprise currently has a low pressure dispenser from SECMER (1984) with an output of 50 kg/min.

9. The capital costs include: the replacement of the low pressure unit by a high pressure dispenser of similar output (US $90,000), trials, technology transfer and training (US $25,000). Incremental operating costs of US $38,900 are expected.

Justification for the Use of HCFCs

10. The above enterprise has chosen interim use of HCFC-141b to maintain product standards and acceptability.

Equipment or Components to be Destroyed or Rendered Unusable

11. There is no mention of the method of destruction of the replaced low pressure dispenser.

Impact of Projects on 1999 Freeze

12. In 1994, the total CFC consumption in the foam sector was estimated at 417 tonnes (country programme). However, recent data gathered during the preparation of the projects under consideration indicates a consumption of 592 tonnes. At its 20th and 22nd meetings the Executive Committee approved three investment projects in the foam sector with a total consumption of 223 tonnes of CFC.

13. In order for Morocco to meet the 1999 freeze, it is considered extremely important to approve the five foam projects under consideration, with a total consumption of 207 tonnes, especially considering the fact that the growth rate in the foam sector is closely linked with the population growth rate which is 3% per year.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

(a) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Molen Industrie S.A.

(b) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Richdor S.A.

1. The Fund Secretariat and UNDP discussed issues regarding the request for safety equipment since these companies are not converting to the use of hazardous chemicals; the cost of the LIA additive; and the rationale used in the calculation of the incremental operating costs. The costs were adjusted as indicated in the project evaluation sheet.

(c) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Mousse D'Or S.A.

(d) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Sodiflex and Tiznit Plastic S.A.

(e) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Salidor S.A.

2. The Executive Committee at its Twenty-second Meeting requested the Fund Secretariat and the Implementing Agencies to finalize their discussions on the guidelines for LCD projects and present their recommendations to the Committee alongside the projects which may be submitted to the Meeting for approval. As at 20 October 1997 there were still ongoing discussions among the Implementing Agencies and the Fund Secretariat with the view to finalizing the recommendations.

3. The final project costs of these and the other LCD projects will be communicated to the Sub-Committee on Project Review should agreement be reached on the guidelines.

RECOMMENDATION(S)

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

Project Title	Project Cost US $	Support Cost US $	Implementing Agency
(a) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Molen Industrie S.A.	56,070	7,289	UNDP
(b) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Richdor S.A.	62,300	8,099	UNDP
(c) Phase out of CFC in the manufacture of flexible foam (Slabstock) at MOUSSE D'OR S.A.	Pending		UNDP
(d) Phase out of CFC in the manufacture of flexible foam (Slabstock) at Sodiflex and Tiznit Plastic S.A.	Pending		UNDP
(e) Phase out of CFC in the manufacture of flexible foam (Slabstock) at SALIDOR S.A.	Pending		UNDP
(f) Phase out of CFC in the manufacture of rigid foam at PANAF Isolation S.A.	137,000	17,810	UNDP