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

Twenty-second Meeting
Nairobi, 28-30 May 1997

PROJECT PROPOSALS: IRAN

This document includes the comments and recommendations from the Fund Secretariat on the following projects:

Foam

- Phasing out of CFC-11 from flexible slabstock foam manufacturing at Shizar Co. — UNIDO
- Phasing out of CFC-11 from flexible slabstock foam manufacturing at Urethane Systems Company (USC) — UNIDO
- Phasing out of CFC-11 from flexible slabstock foam manufacturing at Safoam Co. — UNIDO

PROJECT EVALUATION SHEET
IRAN

SECTOR: Foams ODS use in sector (1993): 805 ODP tonnes

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

Project Titles:
(a) Phasing out of CFC-11 from blexible slabstock foam manufacturing at Safoam Co..
(b) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Urethane Systems Company (USC).
(c) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Shizar Co..

Project Data	Slabstock		
	Safoam	USC	Shizar
ODS phase-out (ODP tonnes)	120	110	120
Proposed project duration (Yrs)	1	1	1
Incremental capital cost (US $)	683,100	677,600	683,100
Contingency (%)	10	10	10
Incremental operational cost/savings (US $)	N/A	N/A	N/A
Total project cost (US $)	683,100	677,600	683,100
Local ownership (%)	100	100	100
Export component (%)	0	0	0
Amount requested (US $) {Original}	683,100	677,600	683,100
{Revised}			
Cost effectiveness (US $/kg)	5.69	6.16	5.69
National Coordinating Agency	Department of the Environment (DOE)		
Implementing Agency	UNIDO		
Technical review completed?	Yes	Yes	Yes

Secretariat's Recommendations:			
Amount recommended (US $)	487,125	487,125	487,125
Project impact (ODP tonnes)	120	110	120
Cost effectiveness (US $/kg)	4.06	4.43	4.06
Implementing Agency support cost (US $)	63,326	63,326	63,326
Total cost to Multilateral Fund (US $)	550,451	550,451	550,451

PROJECT DESCRIPTION

(a) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Safoam Co..
(b) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Urethane Systems Company (USC).
(c) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Shizar Co..

1. The three companies manufacture flexible slabstock polyurethane foam of density 12.5-60kg/min used for the furniture and textile lamination industries. Safoam has installed capacity of 5000 tonnes per annum with current output of about 2000 tonnes, 80 per cent of which is of density 15-20 kg/m^3. USC has installed capacity of 3200 tonnes per annum with current output at 900-1300 tonnes. Shizar Co. operates a 25 year-old Viking foam machine and has annual installed capacity of about 1500 tonnes and current output of about 1000 tonnes. It produces four different densities of foam of 13-20 kg/min.

2. The companies will phase out CFC-11 from the production of flexible slabstock foams by the use of the licensed technology which utilizes liquid carbon dioxide as a blowing agent (liquid carbon dioxide (LCD) technology). The project will be implemented through acquisition of the license, modification of existing production facilities and installation of supplementary equipment and instruments.

3. The original project costs for each company were as follows:

(i)	Capital Costs	US $
	Storage and handling of liquid CO_2	70,000
	LCD system	350,500
	Support frame for LCD system	25,000
	High pressure transfer systems (TDI US $5,000 - Polyol US $5,000)	10,000
	High pressure metering systems water/amine US $6,000; Silicone US $10,000; TDI US $50,000; water US $10,000	76,000
	License fee	50,000
	General consultancy and engineering design	40,000
	Contingency	62,100
	Total	683,100
(ii)	Incremental operational cost (savings)	not calculated

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. Six projects utilizing the liquid carbon dioxide (LCD) technology - three for Iran, one for Macedonia and two for Morocco have been submitted for approval at this meeting. Although there is evidence that operational savings could be realized through the use of the LCD technology, an appropriate method for calculating such savings has not as yet been established in spite of the on-going efforts of the Secretariat and the implementing agencies to elaborate one. Calculation of incremental operational costs of the six projects based on the methylene chloride methodology and using 50% of the rate of yield losses applicable to methylene chloride projects, showed incremental operational savings range between 16% and 75% (for projects with CFC-11 consumption of 110 tonnes and 280 tonnes respectively) of the capital costs, while calculation using the same parameters as those of methylene chloride technology gave about zero and US $94,000 operational costs for two companies using 150 and 160 tonnes of CFC-11 respectively.

2. Following discussions of the six projects between the Secretariat and the implementing agencies (UNDP and UNIDO) regarding potential benefits, project implementability and other related issues, it was agreed to consider 25% of the capital cost of each project as incremental operational savings, pending completion of the elaboration by the Secretariat and the implementing agencies of a suitable method for calculating the incremental operational cost/savings.

3. The capital costs of all the six projects were also jointly reviewed by the Fund Secretariat and foam experts from UNDP and UNIDO to ensure uniformity in costing.

4. Each company will have the following project costs. The US $50,000 license fee is not subject to 10% contingency charge..

(i)	Cost of equipment	545,000
(ii)	10% Contingency	54,500
(iii)	License fees	50,000
(iv)	Incremental capital cost	649,500
(v)	Incremental operational savings, ie. 25% of (iv)	(162,375)
(v)	Total project cost	487,125

6. Consequently, the amount of US $487,125 was recommended for approval for each of the three companies.

Impact of the Projects on Meeting the 1999 Freeze

7. The project documents indicate as follows:

"A systematic implementation of all projects identified in order of priorities would result in a reduction of 76.2% of ODS during 1993-1998. The remainder will be phased out during 1998 - 2005.

RECOMMENDATION

1. The Fund Secretariat recommends blanket approval of the projects with the funding levels and associated support costs as indicated below.

Project Title	Project Cost US $	Support Cost US $	Implementing Agency
(a) Phasing out of CFC-11 from blexible slabstock foam manufacturing at Safoam Co.	487,125	63,326	UNIDO
(b) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Urethane Systems Company (USC).	487,125	63,326	UNIDO
(c) Phasing out of CFC-11 from flexible slabstock foam manufacturing at Shizar Co.	487,125	63,326	UNIDO