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

PROJECT PROPOSALS: TANZANIA

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

Foam

- Phaseout of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at H.K. Foam Ltd. UNDP
- Phaseout of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Pan Africa Enterprises Ltd. UNDP

PROJECT EVALUATION SHEET TANZANIA

SECTOR: FOAM ODS use in sector (1997): 115 ODP tonnes

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

Project Titles:

- (a) Phaseout of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at H.K. Foam Ltd.
- (b) Phaseout of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Pan Africa Enterprises Ltd.

Project Data	Flexible	
	H.K. Foam	Pan Africa
ODS phase-out (ODP tonnes)	32	35
Proposed project duration (months)	24	24
Incremental capital cost (US \$)	137,500	231,000
- including contingency (%)	10	10
Incremental operational cost (US \$)	(23,800)	(17,200)
Total project cost (US \$)	113,700	213,800
Local ownership (%)	100	100
Export component (%)	0	0
Amount requested (US \$) {Original}	130,900	213,600
{Revised}	113,700	213,800
Cost effectiveness (US \$/kg)	4.09	6.10
National Coordinating Agency	Vice President's Office through the National Ozone Office	
Implementing Agency	UNDP	
Technical review completed?	Yes	

Secretariat's Recommendations:		
Amount recommended (US \$)	Pending	Pending
Project impact (ODP tonnes)		
Cost effectiveness (US \$/kg)		
Implementing Agency support cost (US \$)		
Total cost to Multilateral Fund (US \$)		

PROJECT DESCRIPTION

- (a) Phaseout of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at H.K. Foam Ltd.**
- (b) Phaseout of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Pan Africa Enterprises Ltd.**

General

1. According to the Tanzania country programme approved in 1996, the total consumption of ODS in 1994 was 264 ODP tonnes. Out of this consumption, 150 tonnes were used in the aerosol sector, 85.8 tonnes in refrigeration and air conditioning, and 27 tonnes in foams. The total consumption of CFC-11 was 132 tonnes, of which 105 tonnes were used in refrigeration and aerosols. The country programme also identified seven foam companies, only one of which (H.K. Foam Ltd.) was using CFC and accounted for the entire 27 tonne consumption. The other companies had phased out CFC and were using methylene chloride or were producing foam which did not require a blowing agent. The companies did not include Pan Africa Enterprises (with two plants at Dar-Es-Salem and Mwanza) and one other enterprise which has been identified but is not submitted to the 26th Meeting.
2. A survey by UNDP's consultant and the government agency responsible for ozone activities has subsequently identified 14 companies with estimated consumption of 106.5 tonnes. Four of the companies are using CFC while the others have converted to methylene chloride or are not using a blowing agent.
3. Data reported by Tanzania to the Ozone Secretariat in 1995 and 1996 show CFC-11 and CFC-12 consumption for those years as 140 tonnes and 146.6 tonnes respectively, in each case, about 4% rate of growth. Given that the aerosol and refrigerant sectors account for over 80% of CFC-11 use in the country, the CFC-11 use in the foam sector may be estimated to be 28-30 tonnes in 1995 and 1996 which does not appear to be consistent with the sector data indicated in the projects.
4. One project in the aerosol sector to phase out 150 tonnes CFC and two in the refrigeration sector to phase out about 54 tonnes have been approved for the country.
5. Projects for three companies with consumption of 32-39.5 tonnes were submitted to the 26th Meeting by UNDP. These companies account for 95% of the foam sector CFC-11 consumption reported to have been identified in the survey. The three projects could potentially phase out the entire consumption in the foam sector.
6. A letter from the Government of Tanzania explaining the discrepancies in the consumption was submitted by UNDP with the projects. This is attached as Annex I to this evaluation.

- (a) **H.K. Foam Ltd.**
 (b) **Pan Africa Enterprises Ltd.**

7. Pan Africa Enterprises Ltd. and H.K. Foam Ltd. produce foam for furnishings and bedding. Pan Africa uses two Spühl low pressure boxfoam machines, while H.K. Foam uses one such machine. All the machines were installed in 1977. The companies will phase out the use of 35 tonnes and 15 tonnes CFC-11 respectively through conversion to methylene chloride technology. The costs will cover the installation of storage tanks to replace the existing 250-liter tanks at US \$30,000 and US \$15,000, methylene chloride metering systems at US \$30,000 and US \$15,000 respectively. Other costs include storage and metering systems for the softening additive at US \$20,000 each, installation of enclosures, upgrade of ventilation at US \$74,000 and US \$50,000 respectively and addition of the electrical control system at US \$10,00 each. Technology transfer, training and trial costs amount to US \$40,000 and US \$35,000 respectively. The incremental operating savings amounted to US \$17,400 and US \$28,000 respectively.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The project costs of Pan Africa and H.K. Foam have been agreed. These are indicated below:

	Incremental Capital Costs (US \$)	Incremental Operating Savings (US \$)	Project Cost (US \$)
Pan Africa	231,000	17,200	213,800
H.K. Foam	137,500	23,800	113,700

2. In view of the discrepancies in the sector consumption, the projects are being submitted for individual consideration.
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