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Executive Committee of
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PROJECT PROPOSALS: GAMBIA

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

Foam

- Phase out of CFC in the manufacture of flexible foam (slabstock) at Karan Foam Manufacturing Ltd. UNDP

Refrigeration

- Refrigerant recovery and recycling scheme UNIDO

PROJECT EVALUATION SHEET GAMBIA

SECTOR: Foams ODS use in sector (1994): 22.66 ODP tonnes

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

Project Title:

Phase out of CFC in the manufacture of flexible foam (slabstock) at Karan Foam Manufacturing Ltd.

Project Data	Slabstock
	Karan Foam
ODS phase-out (ODP tonnes)	11
Proposed project duration (Yrs)	2
Incremental capital cost (US \$)	71,500
Contingency (%)	10
Incremental operational cost (US \$)	(8,000)
Total project cost (US \$)	63,500
Local ownership (%)	100
Export component (%)	0
Amount requested (US \$) {Original}	63,500
{Revised}	
Cost effectiveness (US \$/kg)	5.77
National Coordinating Agency	National Environmental Agency
Implementing Agency	UNDP
Technical review completed?	Yes

Secretariat's Recommendations:	
Amount recommended (US \$)	63,500
Project impact (ODP tonnes)	11
Cost effectiveness (US \$/kg)	5.77
Implementing Agency support cost (US \$)	8,255
Total cost to Multilateral Fund (US \$)	71,755

PROJECT DESCRIPTION

Phase out of CFC-11 in the manufacture of flexible foam (slabstock) at Karan Foam Manufacturing Ltd.

1. Karan Foam Manufacturing Ltd will phase out the use of CFC-11 in its production of flexible (Slabstock) foam through replacement with methylene chloride.
2. The project includes safety related investments (ventilation (US \$30,000), methylene chloride metering system (US \$15,000), trials, technology transfer and training (US \$20,000)). Incremental operating benefits have been taken into account.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Fund Secretariat and the implementing agency have agreed on the proposed grant.

Impact of Project on Meeting the 1999 Freeze

2. There is no statement on the impact of the project on the country's ability to meet the 1999 freeze in ODS consumption. However, CFC-11 consumption to be phased out represents the entire consumption for the foam sector.

RECOMMENDATION

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

<u>Project Title</u>	<u>Project Cost</u> <u>US \$</u>	<u>Support</u> <u>Cost US \$</u>	<u>Implementing</u> <u>Agency</u>
Phase out of CFC in the manufacture of flexible foam (slabstock) at Karan foam Manufacturing Ltd.	63,500	8,255	UNDP

PROJECT EVALUATION SHEET GAMBIA

SECTOR: REFRIGERATION ODS use in sector (1993): 10.2 tonnes

Sub-sector cost-effectiveness thresholds: CFC Recovery & Recycling N/A

Project Title:

Refrigerant recovery and recycling scheme

Project Data		CFC Recovery & Recycling	
ODS phase-out (ODP tonnes)		7.75	
Proposed project duration (Yrs)		2	
Incremental capital cost (US \$)		68,000	
Contingency (%)		0	
Incremental operational cost (US \$)		-	
Total project cost (US \$)		68,000	
Local ownership (%)		-	
Export component (%)		-	
Amount requested (US \$)	{Original}	78,400	
	{Revised}	68,000	
Cost effectiveness (US \$/kg)		8.77	
National Coordinating Agency		National Environment Agency	
Implementing Agency		UNIDO	
Technical review completed?		Yes	

Secretariat's Recommendations:	
Amount recommended (US \$)	68,000
Project impact (ODP tonnes)	7.75
Cost effectiveness (US \$/kg)	8.77
Implementing Agency support cost (US \$)	8,840
Total cost to Multilateral Fund (US \$)	76,840

PROJECT DESCRIPTION

1. This project will reduce the amount of CFC refrigerant currently used for the servicing of domestic and commercial refrigeration equipment by implementing an organized system of refrigerant recovery and recycling and providing a training course on a "train the trainers" basis which will be attended by representatives of the majority of refrigeration service enterprises in the country. This programme will be part of a National Refrigerant Management Plan.
2. The basic data used in the preparation of the project was extracted from the Gambia country programme and verified by UNIDO's consultant in the field during the project preparation mission. A simple CFC consumption model was designed by UNIDO to verify the consumption data reported in the country programme and adjusted according to the field work.
3. The objective of the project is to reduce the amount of CFCs used for the repair and servicing of domestic refrigerators, commercial refrigeration equipment and air conditioning systems. Refrigerant consumption constitutes over 70% of Gambia's ODS usage, therefore, this project is a vital element in the government's ODS phaseout strategy.
4. A recovery and recycling nation-wide network comprising 30 recovery units and 3 recycling centers will be established, at a cost of US \$27,500. The project also includes 50 refrigeration servicing kits (vacuum pump, leak detector and set of tools) at a cost of US \$700 each. Fifty per cent of the cost will be requested from the Multilateral Fund, and the remaining will be borne by the workshops provided that easy payment terms can be arranged.
5. Twelve 5-day courses will be provided to train technicians from each of the 120 service workshops in existence, at a cost of US \$23,000. Trainers for this project will be recruited from local refrigeration technicians and refrigeration engineers (some trainers were identified during the course of the mission). The training course will include, *inter alia*, issues regarding ozone depletion, good service practices and safety in the handling of refrigerants, refrigerant recovery and recycling procedures, techniques in retrofitting systems.
6. In total, 7.5 tonnes of CFC will be phased-out each year, equivalent to 30.7 per cent of the amount calculated as the freeze target. This amount does not take into account the amount of refrigerant that might be saved owing to the teaching of good service and maintenance practices at the training seminars.
7. The project will be implemented according to the rules and procedures of UNIDO, in close cooperation with the National Environment Agency who will provide the necessary local coordination and control. A consultant will be appointed and fielded by UNIDO to implement the "train the trainers" course.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Executive Committee at its 17th Meeting allocated US \$45,000 to UNIDO to prepare CFC recovery and recycling projects in Benin, Botswana, Burkina Faso, Gambia, Guinea, Namibia and Senegal.

2. A refrigerant management plan for Gambia has not been developed. However, the project proposal states that most of the components of a refrigerant management plan have been included in the project: (i) an inventory of ODS-using equipment by sector and sub-sector has been made, (ii) basic policy instruments and economic instruments will be achieved through a series of Government measures to support the phase-out of ODS, (iii) ban on import of vehicles containing CFC-12 based MACs (1998), ban on import of CFC-12 refrigeration systems including compressors (2000), ban on bulk import of CFC refrigerants (2002) and implementation of a customs CFC Identification System (2000), (iv) introduction of a mandatory license for refrigeration technicians, (v) a comprehensive national training programme for refrigeration technicians for improving operations, service and maintenance practices, and (vi) establishment of a national refrigerant recovery and recycling programme.

3. Based on issues raised by the Fund Secretariat, UNIDO included a statement on how the project will help the country to meet the 1999 freeze, reviewed the calculation on the amount of CFC to be recovered and recycled, and reviewed the content of the training programme to focus on good servicing practices and recovery and recycling of refrigerants.

4. UNIDO and the Fund Secretariat discussed the eligibility and level of costs of several pieces of equipment requested (recovery machines, vacuum pumps, refrigerant storage tanks). UNIDO agreed to adjust the costs of this equipment according to costs approved in similar projects.

RECOMMENDATION

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

<u>Project Title</u>	<u>Project Cost</u> <u>US \$</u>	<u>Support</u> <u>Cost US \$</u>	<u>Implementing</u> <u>Agency</u>
Refrigerant recovery and recycling scheme	68,000	8,840	UNIDO