



**United Nations
Environment
Programme**



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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 PROPOSAL: SENEGAL

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

Refrigeration

- National CFC recovery and recycling scheme

UNIDO

SECTOR: REFRIGERATION ODS use in sector (1996): 157 tonnes

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

Refrigerant recovery and reclaim scheme

Project Data	CFC Recovery & Recycling
ODS phase-out (ODP tonnes)	37.4
Proposed project duration (Yrs)	2
Incremental capital cost (US \$)	136,250
Contingency (%)	0
Incremental operational cost (US \$)	-
Total project cost (US \$)	136,250
Local ownership (%)	-
Export component (%)	-
Amount requested (US \$) {Original}	246,200
{Revised}	136,250
Cost effectiveness (US \$/kg)	3.64
National Coordinating Agency	Ministry of Tourism and Nature Protection
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations:

Amount recommended (US \$)	136,250
Project impact (ODP tonnes)	37.4
Cost effectiveness (US \$/kg)	3.64
Implementing Agency support cost (US \$)	17,713
Total cost to Multilateral Fund (US \$)	153,963

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 Senegal 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 98% of Senegal'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 145 recovery units and 12 recycling centers will be established, at a cost of US \$101,250. The project also includes ??? 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. In total, 15.5 tonnes of CFC will be phased-out each year, equivalent to 37.7 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.
6. The Executive Committee approved at its 11th Meeting a training programme for refrigeration repair technicians and allocated US \$58,000 to UNEP for its implementation. The project was originally intended to train 200 service technicians in good servicing techniques in the country, but only 127 technicians could be trained with the budget provided for the project. At the request of the Government of Senegal, the Government of France submitted to the 21st Meeting of the Executive Committee a proposal to complete the training project (US \$16,500). Therefore, no additional training is included in the proposal.
7. The project will be implemented according to the rules and procedures of UNIDO, in close cooperation with the Ministry of Ministry of Tourism and Nature Protection 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 Senegal 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) control of CFC consumption according to the phase-out scenario given in the country programme by a combination of exemptions on CFC recovery and recycling equipment, ban on importation of CFC based refrigeration equipment and tax exempts for import of non-ODS refrigerants and non-ODS based equipment, (iv) introduction of a mandatory license for refrigeration technicians, (v) national training programme for refrigeration technicians for improving operations, service and maintenance practices (already implemented), 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.

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	136,250	17,713	UNIDO