



**United Nations
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Programme**

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

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PROJECT PROPOSAL: CENTRAL AFRICAN REPUBLIC

This document includes the Comments and Recommendations from the Fund Secretariat on the following project:

Refrigeration

- Implementation of a national programme for recovery and recycling of refrigerants

UNDP

SECTOR: **REFRIGERATION** ODS use in sector (1994): 31.2 ODP tonnes
CFC RECOVERY AND RECYCLING

Project Title:

Implementation of a national programme for recovery and recycling of refrigerant

Project Data	Recovery and recycling
ODS phase-out (ODP tonnes)	4.1
Proposed project duration (Yrs)	1.5
Incremental capital cost (US \$)	66,441
Incremental operational cost (US \$)	-
Total project cost (US \$)	66,441
Amount requested (US \$) {Original}	72,249
{Revised}	66,441
Cost effectiveness (US \$/kg)	16.08
National Coordinating Agency	National Technical Ozone Group, Ministry of Environment
Implementing Agency	UNDP
Technical review completed?	Yes

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	66,441
Project impact (ODP tonnes)	4.1
Cost effectiveness (US \$/kg)	16.08
Implementing Agency support cost (US\$)	8,637
Total cost to Multilateral Fund	75,078

PROJECT DESCRIPTION AND SECRETARIAT'S COMMENTS

1. The project will implement a comprehensive national programme for recovery and recycling of refrigerants in the refrigeration and air conditioning sub-sectors. This programme is part of an overall ODS phase out strategy for the refrigeration sector.
2. A survey conducted by UNDP in 1996 indicated that there are approximately 140 refrigeration technicians in the country, 39 registered workshops repairing commercial and industrial refrigeration equipment, and 5 workshops repairing MAC units. Of the total workshops, only 10 used more than 300 kg of CFC-12 per year.
3. The first priority in this programme is to improve the maintenance practices of technicians, stop CFC discharge into the atmosphere by repairing leaks and controlling emissions from refrigeration equipment, followed by CFC recovery from existing installations during maintenance practices.
4. A recovery and recycling nation-wide network comprising 17 recovery units and 2 recycling machines will be established, at a cost of US \$52,441. Any CFC-recovered by companies or workshops not included in the recovery network will also be treated in the recycling centers.
5. Three training workshops for service technicians of refrigeration and air conditioning equipment, at a cost of US \$14,000, are envisioned which will include a practical demonstration on recovery and recycling equipment; good service practices and safety in the handling of refrigerants during installation, servicing, retrofitting and dismantlement of refrigeration and/or air conditioning equipment; and detection of CFC leaks and prevention of emissions. The seminars will utilize some of the training documentation and materials used in previous seminars held elsewhere, as well as those prepared by UNEP.
6. In total, 4.1 tonnes of CFC could be recovered and recycled each year. 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. To ensure the success of the programme, the Government will introduce a monitoring system to check the amount of CFC being recovered and recycled by each piece of recovery equipment and assure the quality of the recycled refrigerant. Since the ozone unit will be responsible for monitoring the programme, UNDP agreed not to request additional funding for this activity, and the project cost was adjusted accordingly.

SECRETARIAT'S RECOMMENDATION

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

Project	Project Cost US \$	Support Cost US \$	Implementing Agency
Implementation of a National Programme for Recovery and Recycling of Refrigerant	66,441	8,637	UNDP