



**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: BOLIVIA

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 refrigerant

UNDP

SECTOR: **REFRIGERATION** ODS use in sector (1994): 75.9 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)	13.8
Proposed project duration (Yrs)	1.5
Incremental capital cost (US \$)	153,005
Incremental operational cost (US \$)	-
Total project cost (US \$)	153,005
Amount requested (US \$) {Original}	153,005
{Revised}	146,000
Cost effectiveness (US \$/kg)	10.55
National Coordinating Agency	Ministerio de Desarrollo Sostenible y Medio Ambiente
Implementing Agency	UNDP
Technical review completed?	Yes

Secretariat's Recommendations

Amount recommended (US \$)	146,000
Project impact (ODP tonnes)	13.8
Cost effectiveness (US \$/kg)	10.55
Implementing Agency support cost (US\$)	18,980
Total cost to Multilateral Fund	164,980

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. The basic data used in the preparation of the project was compiled by the Governmental Ozone Committee and a national consultant under the supervision of UNDP. Questionnaires were sent to 240 service workshops of a total number of 500 workshops operating in Bolivia. Replies were received from 180 shops, 80 per cent of which are using CFC-12 refrigerant.
3. The first priority in this programme is to stop CFC discharge into the atmosphere by repairing leaks and controlling unnecessary emissions from refrigeration equipment, followed by CFC recovery from existing installations during maintenance and prior to retrofits or dismantlement.
4. A recovery and recycling nation-wide network comprising 50 recovery units and 3 recycling machines will be established, at a cost of US \$131,505. 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 \$14,500 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, 13.8 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	146,000	18,980	UNDP