



**United Nations
Environment
Programme**



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

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PROJECT PROPOSAL: SRI LANKA

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): 317.0 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)	30.1
Proposed project duration (Yrs)	1.5
Incremental capital cost (US \$)	352,400
Incremental operational cost (US \$)	-
Total project cost (US \$)	352,400
Amount requested (US \$) {Original}	525,100
{Revised}	352,400
Cost effectiveness (US \$/kg)	11.71
National Coordinating Agency	Ministry of Transport, Environment and Women's Affairs
Implementing Agency	UNDP
Technical review completed?	Yes

Amount recommended (US \$)	352,400
Project impact (ODP tonnes)	31.2
Cost effectiveness (US \$/kg)	11.71
Implementing Agency support cost (US\$)	45,812
Total cost to Multilateral Fund	398,212

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 ozone unit in 1995 indicated that there are approximately 1,000 air conditioning and refrigeration workshops in the country. 289 of these workshops are in the organized sector (150 workshops servicing domestic refrigerators, 40 servicing commercial refrigeration units, 40 servicing central air conditioners and 59 servicing MAC equipment). The survey also indicated an increase in the annual consumption of CFCs in the refrigeration sector, from 188 tonnes in 1991 (as reported in the country programme) to 317 tonnes.
3. The objectives of this programme are to improve the maintenance practices of refrigeration technicians, stop CFC discharge into the atmosphere by repairing leaks and controlling emissions from refrigeration equipment, and recover CFCs from existing installations during maintenance practices.
4. The project proposal as originally submitted proposed the establishment of a recovery and recycling nation-wide network comprising 216 recovery units and 8 recycling machines; 90 of the recovery units would be used by technicians in the unorganized sector. After discussions between the Fund Secretariat and UNDP, it was agreed to reduce the number of recovery machines to 124, most of which would be distributed among the registered service workshops.
5. Eight training workshops for service technicians of refrigeration and air conditioning equipment, at a cost of US \$22,000, 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, 30.1 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. Any CFC-recovered by companies or workshops not included in the recovery network will also be treated in the recycling centers.
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	352,400	45,812	UNDP