



**United Nations
Environment
Programme**



Distr.
LIMITED

UNEP/OzL.Pro/ExCom/23/31
18 October 1997

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Twenty-third Meeting
Montreal, 12-14 November 1997

PROJECT PROPOSALS: GUYANA

This documents includes the comments and recommendations of the Fund Secretariat on the following project proposals:

Refrigeration

- Phasing out ODS at Guyana Refrigerator Ltd., Guyana (GRL)

UNIDO

Refrigerant Management Plan

- Refrigerant Management Plan

UNEP
Government
of Canada

PROJECT EVALUATION SHEET **GUYANA**

SECTOR: REFRIGERATION ODS use in sector (1993): 11.2 ODP tonnes

Sub-sector cost-effectiveness thresholds: Domestic 13.76 US \$/kg

Project Titles:

Phasing out ODS at the Guyana Refrigerator Ltd.

Project Data	Domestic Refrigeration
	Guyana Refrigerator
ODS phase-out (ODP tonnes)	10.2
Proposed project duration (months)	18
Incremental capital cost (US \$)	485,000
- including contingency (%)	10
Incremental operational cost (US \$)	28,324
Total project cost (US \$)	513,324
Local ownership (%)	95
Export component (%)	
Amount requested (US \$) {Original}	464,858
{Revised}	
Cost effectiveness (US \$/kg)	45.6
National Coordinating Agency	Ministry of Foreign Affairs
Implementing Agency	UNIDO
Technical review completed?	Yes

Secretariat's Recommendations:	
Amount recommended (US \$)	
Project impact (ODP tonnes)	
Cost effectiveness (US \$/kg)	
Implementing Agency support cost (US \$)	
Total cost to Multilateral Fund (US \$)	

PROJECT DESCRIPTION

Phasing out ODS at the Guyana Refrigerator Ltd.

1. GRL is the only producer of refrigerators and freezers in Guyana and is reported by UNIDO to have a CFC consumption of 10.2 MT from the total CFC consumption estimated at 11.2 tonnes for the domestic refrigeration/rigid foam sectors in Guyana. Guyana is a low volume ODS consuming country.
2. GRL is partially (5%) owned by non-Article 5 interests.
3. GRL produces 11 models of refrigerators and freezers and produced about 5,458 units in 1994-1995 (last year for which data was made available).
4. The proposal contains a table showing the distribution of production models and their CFC-11 and CFC-12 consumption as calculated by UNIDO. CFC inventory at the enterprise showed much higher use of CFC-12 than justified. UNIDO mentioned that this is probably due to working habits which leads to unnecessary emission of CFCs.
5. GRL is requesting funds to convert its refrigeration and foaming operations to HFC-134a and cyclopentane. The requested funds are to provide for new charging board, vacuum pumps, leak detectors, high pressure foaming machine suitable for use with hydrocarbon and all the safety measures associated with storing and piping of cyclopentane, gas detection and ventilation systems and fire protection system. The proposal involves training of personnel.
6. GRL is requesting incremental operating costs for 6 months.
7. The proposal does not contain a statement regarding implementation of Executive Committee's decision in meeting the 1999 freeze.
8. The company shall provide evidence that it has scrapped the redundant equipment and will recover any proceeds from their sale to the project.

SECRETARIAT'S COMMENT AND RECOMMENDATION

COMMENT

1. The Secretariat informed UNIDO that the calculated CFC consumption at GRL is almost 6.5 tonnes per year which makes the cost effectiveness of the project extremely poor at US \$80/kg.

RECOMMENDATION

1. The Project Review Sub-Committee may wish to consider how to deal with projects of this nature now and in the future.

PROJECT EVALUATION SHEET **GUYANA**

SECTOR: REFRIGERATION ODS use in sector (1995): 38.4 ODP tonnes

Sub-sector cost-effectiveness thresholds: RMP n/a

Project Title: Refrigeration Management Plan

Project Data	REFRIGERANT MANAGEMENT PLAN	
ODS phase-out (ODP tonnes)		6.5
Proposed project duration (months)		36
Incremental capital cost (US \$)		168,745
- including contingency (%)		10
Incremental operational cost (US \$)		
Total project cost (US \$)		168,745
Local ownership (%)		N/A
Export component (%)		N/A
Amount requested (US \$) {Original}		168,745
{Revised}		
Cost effectiveness (US \$/kg)		N/A
National Coordinating Agency	National Ozone Action Unit	
Implementing Agency	UNEP, Government of Canada	
Technical review completed?		N/A

<i>Secretariat's Recommendations:</i>		
Amount recommended (US \$)		139,450
Project impact (ODP tonnes)		6.5
Cost effectiveness (US \$/kg)		N/A
Implementing Agency support cost (US \$)		8,580
Total cost to Multilateral Fund (US \$)		148,030

PROJECT DESCRIPTION

Refrigerant Management Plan

1. The Government of Guyana is submitting for consideration by the Committee at its 23rd Meeting the Guyana country programme, a request for establishment of a national ozone unit (institutional strengthening) (UNEP/OzL.Pro/ExCom/23/58), and two proposals in the refrigeration sector, namely, a refrigerant management plan and a project for phasing out ODSs at Guyana Refrigerator Ltd.
2. Based on information gathered during the preparation of the country programme in 1995, total ODS consumption in the country was estimated at 39.3 tonnes, the majority of which (38.4 tonnes) was used in the refrigeration and air-conditioning sector.
3. Guyana has about 1,000 service technicians in the refrigeration and air-conditioning sector. While the industrial users and large service organizations have well trained technicians; there are a large number of service workshops with untrained technicians, who service household refrigerators and smaller refrigeration equipment. Industrial systems are well maintained, usually by in house technicians. In the commercial and domestic sector, most repairs are related to compressor burn out caused by voltage fluctuation. Authorized MAC service centres are aware of the new HFC-134a systems and are already equipped to service these systems; however, informal automotive mechanics are not properly equipped to service CFC-12 systems.
4. The Environmental Protection Act of 1996 provides for regulations to be made for implementation of control measures aimed at restricting or prohibiting use of ODSs. Based on this Act, the Ozone Unit will develop and implement specific control measures including, inter alia, prohibiting imports of equipment using ODS and new enterprises producing and/or assembling ODS based equipment, establishment of a certification programme for service technicians, establishment of taxes, import quotas and licenses for ODSs and enforced identification requirements on imported ODSs; and reduction on import tariffs on equipment and materials for implementation of ODS phase out projects. The RMP proposes a time frame for implementation of these policies, together with regulatory measures and incentives.
5. The RMP identified two basic training programmes, namely, training for monitoring and control of ODS and ODS using equipment, aimed at enforcement officers from the Ozone Unit, and Customs and Bureau of Statistics, to identify and develop techniques for collecting and reporting consumption of import data; and training for refrigeration technicians in good management practices using the "train the trainers" approach. This programme aims at improving service and maintenance practices in order to prevent intentional and/or unintentional release of ODS into the atmosphere, thus making it possible for refrigeration equipment to operate to the end of its useful life.
6. The RMP also includes a subproject for the establishment of a recovery and recycling network comprising 11 recovery units and one recycling centre for servicing commercial and industrial refrigeration equipment and 5 MAC recovery and recycling units, at a cost of US \$65,000. This activity also provides for a one-day workshops for service technicians on

practical demonstration on recovery and recycling equipment. The recovery and recycling programme will be implemented only when necessary economic and policy instruments are put into place in the country.

7. In total, 6.5 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.

8. In the RMP, the Government reiterates its commitment to comply with its obligations under the Montreal Protocol. A combination of control measures and incentives, introduction of equipment using non-ODS refrigerants, coupled with implementation of training in good maintenance practices and an effective recovery and recycling programme is expected to ease the economic consequences of the phase out.

9. The Ozone Unit will be responsible for the monitoring, co-ordination and successful implementation of proposed phase-out activities in the RMP. ODS consumption will be monitored by the Ozone Unit with the cooperation of the Bureau of Statistics, the Customs Department and suppliers and consumers of ODS.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Executive Committee at its 22nd Meeting decided to request UNEP, in consultation with the Secretariat, the other implementing agencies and members of the Executive Committee, to review the proposed guidelines for RMPs and submit them to the September 1997 meeting of the Sub-Committee on Project Review (Decision 22/24). The Sub-Committee, at its September Meeting, welcomed the revised draft guidelines and provided further guidance on work to be done. Based on discussion at the Sub-Committee's meeting, UNEP IE revised the RMP guidelines for submission to the 23rd Meeting of the Executive Committee.

2. The Guyana RMP follows the RMP guidelines as revised by UNEP.

3. Bearing in mind the importance of the RMP as one of the few activities that could assist the Government of Guyana to meet its obligations under the Montreal Protocol, the Secretariat and UNEP discussed in detail the major components of the RMP, in particular, the timing of implementation of regulatory and legislative requirements, the fiscal steps to make recovery and recycling economically feasible, and modalities for the implementation of the training programme in good management practices in order to cover the majority of the service technicians operating in the country.

4. The Secretariat and UNEP also discussed the size of the recovery and recycling programme and the level of funding requested for recovery equipment and related components

(storage cylinders, refrigerant bags and pumps) as compared to other recovery and recycling projects already approved. The cost of the subproject was adjusted accordingly.

5. The Secretariat and UNEP discussed the modalities of coordination and implementation of the various activities in the RMP, the monitoring and evaluation roles of the Ozone Unit, the responsibilities of government agencies and industrial associations during implementation of the RMP as well as the Government's commitment to its implementation. The firm commitment of the Government to comply with its obligation under the Montreal Protocol is stated in the official letter of transmittal for the country programme, the country programme itself and the RMP.

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 Title	Project Cost US \$	Support Cost US \$	Implementing Agency
Refrigeration Management Plan:			
a) Training of trainers for good refrigeration servicing practices	50,000	6,500	UNEP
b) Training on monitoring and control of ODS and ODS using equipment	16,000	2,080	UNEP
c) National recovery and recycling programme	73,450		Government of Canada

2. To request UNEP and the Government of Canada not to proceed with the disbursement of funds approved for the training programmes and the recovery and recycling programme until the regulatory and legislative requirements and fiscal steps proposed by the Government of Guyana are put into place.