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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Forty first Meeting  
Montreal, 17 -19 December 2003

**PROJECT PROPOSALS: MAURITANIA**

This document consists of the comments and recommendations of the Fund Secretariat on the following project proposals:

Refrigeration:

- Implementation of the refrigerant management plan: training for customs excise UNEP
- Implementation of the refrigerant management plan: training the trainers of refrigeration technicians UNEP
- Implementation of the refrigerant management plan: centralized recovery and recycling of CFC-12 programme UNDP
- Implementation of the refrigerant management plan: awareness and incentive programme for MAC, commercial and industrial end-users UNDP
- Implementation of the refrigerant management plan: monitoring the activities UNEP

**PROJECT EVALUATION SHEET  
MAURITANIA**

SECTOR: Refrigeration ODS use in sector (2002): 14.8 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A US \$/kg

**Project Titles:**

- (a) Implementation of the refrigerant management plan: training for customs excise
- (b) Implementation of the refrigerant management plan: training the trainers of refrigeration technicians
- (c) Implementation of the refrigerant management plan: centralized recovery and recycling of CFC-12 programme
- (d) Implementation of the refrigerant management plan: awareness and incentive programme for MAC, commercial and industrial end-users
- (e) Implementation of the refrigerant management plan: monitoring the activities

Project Data	Refrigeration management plan				
	(a)	(b)	(c)	(d)	(e)
Enterprise consumption (ODP tonnes)					
Project impact (ODP tonnes)			2.2	3.0	
Project duration (months)	12	18	36	36	36
Initial amount requested (US \$)	39,800	65,000	118,758	180,000	20,700
Final project cost (US \$):					
Incremental capital cost (a)			93,261		
Contingency cost (b)			7,734		
Incremental operating cost (c)					
Total project cost (a+b+c)	39,800	65,000	100,995	100,000	30,000
Local ownership (%)	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%
<b>Amount requested (US \$)</b>	<b>39,800</b>	<b>65,000</b>	<b>100,995</b>	<b>100,000</b>	<b>30,000</b>
Cost effectiveness (US \$/kg.)					
Counterpart funding confirmed?					
National coordinating agency		National Ozone Office			
Implementing agency	UNEP	UNEP	UNDP	UNDP	UNEP

<b>Secretariat's Recommendations</b>					
Amount recommended (US \$)	39,800	65,000	100,995	100,000	30,000
Project impact (ODP tonnes)			2.2	3.0	
Cost effectiveness (US \$/kg)					
Implementing agency support cost (US \$)	5,174	8,450	9,090	9,000	3,900
Total cost to Multilateral Fund (US \$)	44,974	73,450	110,085	109,000	33,900

## PROJECT DESCRIPTION

### Background

1. In 2002, the total CFC consumption in Mauritania was estimated at 14.8 ODP tonnes, mainly CFC-12 (14.3 ODP tonnes). The total CFC consumption was used for servicing domestic refrigerators (7.8 ODP tonnes), commercial and industrial refrigeration systems (3.1 ODP tonnes) and MAC units (3.9 ODP tonnes). The CFC baseline for compliance is 15.7 ODP tonnes.

### Servicing sector

2. The refrigeration equipment is serviced by 250 technicians working in over 50 small service workshops. Most of the refrigeration systems are serviced in workshops, and only larger refrigeration installations have in-house technicians.

3. The main cause of repair of refrigeration equipment is small leaks; usually owners of the refrigeration equipment top-up the units until the refrigeration equipment is emptied of merchandise. Subsequently, the service technician would repair the leak after venting the refrigerant charge. The main cause of repairs of MAC units is related to leaks due to vibrations as a result of road conditions. In a few cases, CFC-12 is used for servicing HFC-134a when a customer does not want to pay a higher price for HFC-134a refrigerant.

4. The current prices of refrigerants per kg are as follows: US \$6.40 for CFC-12, US \$26.00 for HFC-134a and US \$6.00 for HCFC-22.

### ODS legislation

5. The Government of Mauritania has drafted an ODS legislation which is expected to be signed prior to the 41<sup>st</sup> Meeting of the Executive Committee.

### RMP project

6. The RMP consists of the following two training programmes:

- (a) Training of customs officers in the identification and control of ODS imports (US \$39,800), to train customs officers on the application of the regulatory framework, and identification and control of ODS and ODS-based equipment;
- (b) Training programme for refrigeration technicians (US \$65,000), to enhance the service skill of refrigeration technicians, introduce good service practices related to non-CFC refrigerants and assist the existing refrigeration associations in the country;

7. The project also contains a proposal for the establishment of one CFC recovery and recycling centre to be operated by a small number of service technicians (US \$100,995). During servicing/repair operations to a refrigeration system, technicians from the centre will accompany the service technician who will perform the repairs, to recover the CFC refrigerants from the

system. The repair technician will receive credits for recycled refrigerants. The recycling centre will be provided with recovery machines, suitable for recovering CFCs and other non-CFC refrigerants provided that extra costs of the machines fall within budget. The technicians from the centre will also receive basic repair and servicing tools (including vacuum pumps and leak detectors) to assist the technicians in performing proper servicing operations. Hands-on training on recovery and recycling techniques and proper maintenance and installation of refrigeration and air conditioning equipment will be provided to technicians at the centres.

8. The proposal includes funding for the operating costs of the centre, including transportation costs, salaries for the technicians and sundries, for a three year period. Payments for the technicians in the recycling centre will be given every six months, and will be based on the amounts of CFCs recovered and recycled. A system for monitoring the quantity and quality of the CFC recycled is planned to ensure the success of the centralized recovery and recycling programme.

9. The RMP project also proposes implementation of an awareness and incentive programme (US \$100,000) to encourage refrigeration end-users to replace or permanently retrofit their existing ODS based equipment to zero/low-ODP refrigerants. An additional US \$30,000 is requested for monitoring and management of the activities proposed in the RMP project.

10. The Mauritania RMP project was submitted with an official letter from the Government of Mauritania stating the Government's commitment to achieve, without further request for funding, at least the 50 per cent reduction in consumption of CFCs by 2005 and the 85 per cent reduction by 2007.

## **SECRETARIAT'S COMMENTS AND RECOMMENDATIONS**

### **COMMENTS**

11. The Secretariat noted that for the years 2000, 2001 and 2002 the Government of Mauritania had not reported any consumption data to the Ozone Secretariat its ODS under Article 7, and had not submitted any progress reports on implementation of the country programme to the Fund Secretariat. In this regard, the Secretariat suggested that UNDP and UNEP advise the Government to submit consumption data reports, accordingly. Subsequently, UNEP informed the Secretariat (3 November 2003) that the Government of Mauritania had submitted pending reports on ODS consumption to the Ozone Secretariat.

12. The Secretariat pointed out that the Executive Committee had allocated US \$60,000 for the preparation of the Mauritania RMP (double the amount that was approved in the past for similar activities), on the understanding that relevant ODS legislation would have been prepared at the time of the preparation of the project proposal to avoid any delays in the implementation of the sub-projects in the RMP. However, ODS regulations have not yet been in place in the country. The Secretariat was informed that in September 2003 the Minister of Rural Development signed a Ministerial Order controlling ODS consumption. Also, discussions were ongoing with the different departments of the Ministry of Commerce to agree on modalities for

implementation of the Ministerial Order before it is signed by the Minister of Commerce. As such, the legislation should be fully signed by December 2003.

13. Several progress reports on recovery/recycling programmes in other Article 5 countries indicate that recovered amounts of CFCs are smaller than the amounts estimated in the project proposals. In this regard the Secretariat sought an explanation from UNDP on the soundness of the assumptions made for estimating that 2.2 ODP tonnes of CFCs would be recovered in Mauritania. UNDP informed the Secretariat that in previous recovery/recycling programmes, the repair technicians carried the recovery machine and ancillaries to the repair site even though in many cases no more refrigerant was available in the refrigeration system. In the new approach, the service technicians will call the technician at the centre when there is a substantial amount of CFC to be recovered. The repair technician will have the incentive to call the centre, since he/she will receive a voucher to obtain 90 per cent of recycled refrigerant back for free. Also, payments to the technicians at the recycling centre will be based on the actual amounts of CFCs recovered/recycled.

14. UNDP also mentioned that, in case where other refrigerants are processed (HCFCs or HFCs), in addition to the CFC quotas established in the UNDP subcontract, additional resources will be available to the centres (as per relevant decisions by the Executive Committee, the extra cost to handle non-CFC refrigerants will be borne by the recipients). By the time the project is completed, and if it proves to be successful, the Government of Mauritania could request further funding in 2007 in order to maintain the centres. Furthermore, the centres may become self-sufficient if they are able to process other refrigerants in addition to CFCs.

15. The Secretariat also expressed a reservation about committing US \$100,000 for an awareness and incentive programme taking into consideration the large difference in price of CFC-12 and HFC-134a. UNDP indicated its views that cost does not constitute a major factor when it comes to the decision of an end-user to retrofit (the refrigerant cost only constitute a fraction of the overall cost of the new system); other factors, such as selecting a more energy-efficient system, more technologically advanced with low/non-leakage of refrigerant, would also have to be considered. The sub-project also includes funding for proper monitoring and assessment by the Government and UNDP.

16. The Secretariat proposed that UNDP should have flexibility in utilizing the resources available under the centralized recovery and recycling programme and the awareness and incentive programme (approximately US \$200,000) when specific needs arise during project implementation (e.g., to provide more recycling machines in the event of a steep rise in the price of CFCs, or to purchase basic service tools should technicians experience difficulties in implementing good practices). Thus, the objective would be to continuously monitor and survey the needs of technicians and adapt the project accordingly.

## **RECOMMENDATIONS**

17. The Fund Secretariat recommends blanket approval of the projects at the funding level indicated below, on the understanding that:

- (a) The Government of Mauritania would have flexibility in utilizing the resources available under the centralized recovery and recycling programme, to address specific needs that might arise during project implementation;
- (b) The sub contracts from the centralized recovery and recycling programme and the awareness and incentive programme would be funded in stages so that resources can be diverted to other activities, such as additional training or procurement of service tools, if the proposed results from the programme are not achieved;
- (c) The centralized recovery and recycling programme and the awareness and incentive programme should not commence until the legislation controlling CFC imports is in place and measures have been taken to ensure that the local market prices of CFCs and non-ODS refrigerants are similar;
- (d) UNDP and UNEP would provide appropriate monitoring throughout project implementation; and
- (e) Approval of the project would be without prejudice to the operation of the Montreal Protocol's mechanisms dealing with non-compliance issues.

<b>Project Titles</b>	<b>Project Funding (US\$)</b>	<b>Support Cost (US\$)</b>	<b>Implementing Agency</b>
Implementation of the refrigerant management plan: training for customs excise	39,800	5,174	UNEP
Implementation of the refrigerant management plan: training the trainers of refrigeration technicians	65,000	8,450	UNEP
Implementation of the refrigerant management plan: centralized recovery and recycling of CFC-12 programme	100,995	9,090	UNDP
Implementation of the refrigerant management plan: awareness and incentive programme for MAC, commercial and industrial end-users	100,000	9,000	UNDP
Implementation of the refrigerant management plan: monitoring the activities	30,000	3,900	UNEP

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