



**United Nations  
Environment  
Programme**

Distr.  
LIMITED

UNEP/OzL.Pro/ExCom/44/47  
30 October 2004

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Forty-fourth Meeting  
Prague, 29 November-3 December 2004

**PROJECT PROPOSAL: MOZAMBIQUE**

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

Refrigeration

- Implementation of the refrigerant management plan: technical assistance in the refrigeration servicing sector France

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**PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECT  
MOZAMBIQUE**

**PROJECT TITLES****BILATERAL/IMPLEMENTING AGENCY**

|                                                                                   |        |
|-----------------------------------------------------------------------------------|--------|
| (a) Refrigerant management plan update: refrigeration and air-conditioning sector | France |
|-----------------------------------------------------------------------------------|--------|

|                                      |                                                                 |
|--------------------------------------|-----------------------------------------------------------------|
| <b>NATIONAL CO-ORDINATING AGENCY</b> | National Directorate of Environmental Impact Assessment (DNAIA) |
|--------------------------------------|-----------------------------------------------------------------|

**LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT****A: ARTICLE-7 DATA (ODP tonnes, 2003, as of October 2004)**

|                       |     |  |  |
|-----------------------|-----|--|--|
| Annex A, Group I CFCs | 1.7 |  |  |
|-----------------------|-----|--|--|

**B: COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes, 2003, as of October 2004)**

| ODS Name | Sub-sector/quantity         | Sub-sector/quantity | Sub-sector/quantity | Sub-sector/quantity |
|----------|-----------------------------|---------------------|---------------------|---------------------|
| CFCs     | Refrigeration servicing 1.7 |                     |                     |                     |

|                                                                    |       |
|--------------------------------------------------------------------|-------|
| <b>CFC consumption remaining eligible for funding (ODP tonnes)</b> | 11.30 |
|--------------------------------------------------------------------|-------|

| <b>CURRENT YEAR BUSINESS PLAN ALLOCATIONS</b> |     | Funding US \$ million | Phase-out ODP tonnes |
|-----------------------------------------------|-----|-----------------------|----------------------|
|                                               | (a) | 127,000               | 10.2                 |

|                                                            |            |
|------------------------------------------------------------|------------|
| <b>PROJECT TITLE:</b>                                      | <b>(a)</b> |
| <b>ODS use at enterprise (ODP tonnes):</b>                 | 9.9        |
| <b>ODS to be phased out (ODP tonnes):</b>                  | *          |
| <b>ODS to be phased in (ODP tonnes):</b>                   | n/a        |
| <b>Project duration (months):</b>                          | 36         |
| <b>Initial amount requested (US \$):</b>                   | 112,000    |
| <b>Final project cost:</b>                                 |            |
| Incremental Capital Cost (US \$)                           |            |
| Contingency (10%) (US \$)                                  |            |
| Incremental Operating Cost (US \$)                         |            |
| Total Project Cost (US \$)                                 | 104,512    |
| <b>Local ownership (%):</b>                                | 100        |
| <b>Export component (%):</b>                               | 0          |
| <b>Requested grant (US \$):</b>                            | 104,512    |
| <b>Cost-effectiveness (US \$/kg):</b>                      | n/a        |
| <b>Implementing agency support cost (US \$):</b>           | 13,587     |
| <b>Total cost of project to Multilateral Fund (US \$):</b> | 118,099    |
| <b>Status of counterpart funding (Y/N):</b>                | n/a        |
| <b>Project monitoring milestones included (Y/N):</b>       | Y          |

|                                     |                                               |
|-------------------------------------|-----------------------------------------------|
| <b>SECRETARIAT'S RECOMMENDATION</b> | Blanket approval at the costs indicated above |
|-------------------------------------|-----------------------------------------------|

\* To be in compliance with the 2005 and 2007 Montreal Protocol limits (CFC baseline is 18.2 ODP tonnes)

## PROJECT DESCRIPTION

1. In 2003, total CFC consumption in Mozambique was estimated at 1.7 ODP tonnes used to service refrigeration systems. The CFC baseline for Mozambique is 18.2 ODP tonnes.
2. According to the survey conducted to prepare the RMP update for Mozambique, most CFC consumption is for servicing domestic refrigerators and freezers (about 50,000 units), commercial refrigeration systems (5,000 systems) and MAC units (1,500 units). About 75 per cent of the refrigeration sector is based on non-CFC refrigerants. There are still a few used CFC-based refrigeration systems being sold in the country.
3. The refrigeration servicing sector consists of a large number of small- and medium-size workshops responsible for servicing all types of refrigeration equipment in operation. There are only a limited number of qualified technicians and only one formal school that provides refrigeration and air conditioning courses
4. The current prices of refrigerants per kg are: US \$4.30 for CFC-12, US \$10.80 for HFC-134a and US \$4.80 for HCFC-22.

### ODS regulations

5. ODS regulations have been drafted and forwarded to the Council of Ministers for approval. The regulations include, among others, control on ODS imports and exports; license requirements for all ODS users; regular data reporting by users on the amounts of ODS used, sold, imported and/or exported; mandatory recovery and recycling of CFCs. According to the Ozone Unit, ODS regulations are expected to be approved in 2004.

### Refrigerant management plan (RMP)

6. The Mozambique RMP was approved at the 26th Meeting of the Executive Committee as a German bilateral project. The RMP was developed as a national/regional project involving 14 South and East African countries. The activities covered under the RMP were related to legislation/policy, training of refrigeration servicing technicians and training of customs officers.
7. The training of customs officers was held as part of the regional training programme; 4 customs officers and the Ozone Officer from Mozambique were trained as trainers and an additional 14 officers have also been trained. Currently, ODS training is part of the regular training curriculum for customs officers.
8. Three refrigeration technicians were trained in Germany as trainers in good refrigeration servicing practices. The training centre in Mozambique received the necessary tools and equipment to provide training courses to other refrigeration technicians. In September 2004, the trainers conducted a training course for 20 technicians as part of the RMP activity.
9. Under the recovery and recycling sub-project (approved at the 22nd Meeting of the Executive Committee, implemented by UNDP), three training workshops on recovery and recycling operations were conducted, in which 100 senior technicians were trained. Twenty-six

recovery units and 3 recycling machines were distributed among service workshops. The amount of CFC-12 recovered has been minimal.

#### RMP update

10. The RMP update proposal, as submitted, includes a request for assistance with finalization and approval of the ODS regulations (US \$7,500); complementary training programmes for customs officers (US \$32,250) and refrigeration servicing technicians (US \$53,750); assistance to restart the previously approved recovery and recycling programme (US \$10,000); and assistance for monitoring (US \$8,500).

11. The Mozambique RMP update project was submitted with an official letter from the Government of Mozambique, signed by the National Director of the Environmental Impact Assessment Department, stating the Government's commitment to achieve, without further requests 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 RECOMMENDATION**

#### **COMMENTS**

12. The Secretariat notes that the project proposal has been submitted in accordance with the provisos of Decision 31/48 and subsequent decisions taken by the Executive Committee regarding RMP proposals, including the level of funding requested.

13. Mozambique's 2003 CFC consumption of 1.7 ODP tonnes is 16.5 ODP tonnes below Mozambique's CFC baseline consumption (e.g., 18.2 ODP tonnes). In this regard, the Secretariat sought an explanation of how the reduction in CFC consumption had been achieved, taking into account that ODS regulations have only been drafted but have not been enacted and enforced; the training programme for refrigeration servicing technicians approved in the original RMP was implemented only in September 2004; only 14 customs officers have been trained; and the amounts of CFCs that have been recovered/recycled/reused through the original recovery and recycling programme are minimal.

14. Subsequently, the Government of Germany indicated that post-civil-war economic growth was the main reason for the replacement of CFC by non-CFC based refrigeration equipment in Mozambique. The population is opting to purchase new non-CFC-based equipment rather than used CFC-based units since there are number of offers that make it possible to buy appliances in instalments. Furthermore, since Mozambique is dependent on South Africa for a large number of manufactured products, the market has moved to non-ODS alternatives because the refrigeration equipment manufactured in South Africa is CFC free.

15. The Secretariat sought additional information on the current status of the 26 recovery units and 3 recycling machines that were distributed under the original recovery and recycling programme. The Secretariat was informed that the Ozone Unit had no information on the equipment distributed. During the survey conducted to prepare the RMP update, it was found

that some of the service workshops that received a recovery unit were not using them frequently. Currently, the Ozone Unit is trying to identify all of the beneficiary workshops.

16. The Secretariat noted that one of the activities proposed in the RMP update is the training of refrigeration technicians to retrofit refrigeration equipment. Taking into consideration the limited number of equipment that could be technically and economically viable for retrofit and the wide range in the current prices of CFCs and non-CFC refrigerants, the long-term sustainability of any retrofit programme at this time is doubtful. In this regard, the Government of Germany pointed out that the training programme for service technicians was considered to be an important activity to enhance and harmonize technicians' skills and know-how. The training is not only in retrofitting, but also in good servicing practices; it will furthermore provide basic servicing tools to small workshops.

17. Based on the results achieved so far in the implementation of recovery and recycling programmes (e.g., much lower amounts of CFCs recovered than the amount originally estimated) and the limited number of end-users that could benefit from the small incentive programme that was proposed in the RMP update, the Secretariat suggested that the Government of Germany examine the merits of combining all of the activities proposed under one overall budget (US \$105,000) earmarked to provide a mix of training and equipment/service tools (such as ancillary equipment for the recovery/recycling units already purchased in the original RMP, brazing equipment, vacuum pumps, leak detectors and other basic tools) to be selected on the basis of needs identified in the course of project implementation. Subsequently, the Government of Germany agreed to adopt this approach.

#### Change of bilateral agency

18. Subsequent to the conclusion of the discussion of the project between Germany and the Secretariat, the Government of Germany submitted an official communication indicating that the Government of France would be the bilateral agency that would implement the RMP update project. The reason for the change of the bilateral agency was that Germany's maximum level of funding for bilateral cooperation in the 2003-2005 triennium has been fully utilized.

19. The Secretariat also received a letter from the Government of France officially re-submitting the RMP project proposal and a letter from the Government of Mozambique indicating its agreement to the change of bilateral cooperating agency.

### **RECOMMENDATION**

20. The Fund Secretariat recommends blanket approval of the project with associated support costs at the funding level shown in the table below, on the understanding that:

- (a) The Government of Mozambique would have flexibility in utilizing the resources available under the RMP update, to address specific needs that might arise during project implementation;

- (b) To the extent possible, the project would be implemented in stages so that resources could be diverted to other activities, such as additional training or procurement of service tools, if the proposed results were not achieved; and
- (c) The Government of France would provide appropriate monitoring throughout project implementation.

|     | <b>Project Title</b>                                                                  | <b>Project Funding (US\$)</b> | <b>Support Cost (US\$)</b> | <b>Implementing Agency</b> |
|-----|---------------------------------------------------------------------------------------|-------------------------------|----------------------------|----------------------------|
| (a) | Implementation of the RMP: technical assistance in the refrigeration servicing sector | 104,512                       | 13,587                     | France                     |

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