



**United Nations
Environment
Programme**

Distr.
LIMITED

UNEP/OzL.Pro/ExCom/38/56
28 October 2002



ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-eight Meeting
Rome, 20-22 November, 2002

**REFRIGERATION MANAGEMENT PLANS AND TERMINAL PHASE-OUT
MANAGEMENT PLANS (DECISION 37/70 (a))**

Background

1. At its 23rd Meeting the Executive Committee approved guidelines for the preparation of refrigerant management plan (RMP) project proposals for low-volume consuming (LVC) countries (UNEP/OzL.Pro/ExCom/23/52).
2. At its 31st Meeting, the Executive Committee decided on the modalities for approving the funding for the preparation and implementation of RMPs for both LVC countries and non-LVC countries (Decision 31/48).
3. At its 37th Meeting, the Executive Committee discussed whether RMP activities included in business plans could be submitted as new terminal phase-out management plans if countries requested agencies to do so. Subsequently, the Executive Committee decided “to request the Secretariat, in collaboration with the implementing agencies and interested Executive Committee members to prepare a document on the issue, taking account of the content of Decision 31/48, for consideration at the 38th Meeting” (Decision 37/70).
4. Pursuant to Decision 37/70, the Secretariat has prepared this document.

RMP projects approved

5. Since the adoption of the guidelines for the preparation of RMP project proposals (November 1997), the Executive Committee has approved for funding RMPs for 60 LVC countries (23 of them submitted in accordance to Decision 31/48), 5 RMPs for non-LVC countries (Algeria, Chile, Sri Lanka, Vietnam and Yemen), two terminal CFC phase out plans for LVC countries (Bahamas and Jamaica), and a CFC phase-out strategy covering eight LVC Pacific Island countries (Table 1).

Findings from the implementation of RMP components

6. The lessons learnt from the implementation of projects and activities related to the refrigeration servicing sector have been reported by Article 5 countries and implementing and bilateral agencies through:
 - (a) More than 85 project completion reports on the implementation of training programme for customs officers, training programme for refrigeration service technicians, and recovery and recycling programmes (including MAC sub-sector) submitted by the implementing and bilateral agencies either as stand alone projects or as components of RMP projects;
 - (b) Progress reports submitted by Article 5 countries on the implementation of their institutional strengthening projects;
 - (c) Progress report on the status of work being undertaken in the projects approved as part of the original RMP project, included in RMP update projects as required by Decision 33/13;
 - (d) Summary reports prepared by each bilateral agency assisting in the preparation

and implementation of RMPs in Article 5 countries (namely, Canada, Germany and Sweden) and implementing agencies (UNDP, UNEP and UNIDO).

7. From the review of the above reports, it can be concluded that CFC consumption in the refrigeration servicing sector depends on combination of the following factors:

- (a) The low price of CFCs. Although the price of CFC refrigerants has increased in the majority of Article 5 countries, it is still lower compared to the price of non-CFC refrigerants. This price differential has been indicated as a reason for the use of CFCs to service non-CFC refrigeration equipment, and low CFC recovery rates, since there is no economic incentive to recover CFC. It is also been indicated that recovery and recycling equipment is then used to recover more expensive refrigerants such as R-22;
- (b) The large number of semi-skilled and non-qualified service technicians in relation to the number of accredited technicians. The relatively low technical qualification of many service technicians has resulted in larger amounts of refrigerants being used in servicing operations (three to five times more than the actual refrigerant contained in the equipment). The train-the-trainer approach is now slowly reaching a considerable proportion of a country's refrigeration technicians and teaching them better service practices;
- (c) The level of enforcement of regulations to control CFCs imports. In the majority of LVC countries, ODS regulations have been enacted and licensing systems have been implemented. However, in many countries the enforcement of the legislation has taken longer time than it was anticipated;
- (d) The rate of introduction of second-hand CFC-based refrigeration equipment. It appears, however, that this situation has been mitigated by two factors: (i) regulations initiated/implemented by several Article 5 and non-Article 5 countries addressing import of CFC-based refrigeration equipment; and (ii) the relative reduction in the numbers of CFC-based equipment becoming available in non-Article 5 countries for export;
- (e) The rate of introduction of non-CFC based refrigeration equipment in operation, replacing CFC-based equipment that is being discarded. Conversion of domestic and/or commercial refrigeration manufacturing plants in 23 LVC countries have been funded by the Multilateral Fund (US \$18.7 million approved to phase out 830 tonnes of CFCs). In many cases, however, the non-CFC based equipment is currently serviced with CFC refrigerant because of its lower cost compared to non-CFC refrigerants (as discussed in (a) above);
- (f) The ageing of refrigeration equipment and the poor maintenance provided throughout the years has lead to high leakage rates. In some cases, the amount of CFCs used annually for servicing has been reported to be more than five times the actual charge of the refrigerant in the system.

Conclusion

8. The data reported to the Ozone Secretariat under Article 7, indicates that the 2000 CFC consumption level in several LVC countries was lower than their CFC baseline (Table 1). However, on the basis of the above-mentioned findings, it is not possible to ascertain if the reductions in CFC consumption could be associated more with market forces and other external factors than the implementation of the activities contained in RMP projects.

9. Therefore, the Executive Committee may wish to continue considering requests for funding for ODS phase out in the refrigeration servicing sector in LVC countries primarily according to Decisions 31/48, subject to the recommendation below.

Recommendation

10. Specific requests for funding of terminal CFC phase-out plans for LVC countries might be considered on a case-by-case basis, provided that:

- (a) the country concerned has a licensing system in operation and has enacted legislation to phase out ODS consumption;
- (b) the prices of ODS refrigerants are similar or close to the prices of alternative refrigerants;
- (c) the Government concerned is committed to achieve, without further request for funding from the Multilateral Fund, the complete phase out of ODSs in accordance with its obligation under the Montreal Protocol;
- (d) the Government is committed to annual reporting of progress in implementing the activities proposed and meeting the reduction steps; and
- (e) implementing and/or bilateral agency(ies) responsible for implementing the terminal phase-out plan be requested to advise the Government concerned on the financial implications to the country for submitting a terminal phase out plan, and make every effort to assist the Government concerned to achieve phase-out targets specified in the plan.

Table 1**CFC consumption data in LVC countries with projects approved in the refrigeration servicing sector (ODP tonnes)**

No.	Country	Latest consumption	Baseline	50%Base	85%Base
LVC countries with RMP					
1	Antigua and Barbuda	5.0	10.7	5.4	0.8
2	Bahrain	113.1	135.4	67.7	10.2
3	Belize	8.8	16.0	8.0	1.2
4	Botswana	2.5	6.8	3.4	0.5
5	Burundi	53.8	59.0	29.5	4.4
6	Chad	36.5	34.6	17.3	2.6
7	Cote D'Ivoire	166.2	294.2	147.1	22.1
8	Croatia	171.2	219.3	109.7	16.4
9	Dominica	1.1	1.5	0.8	0.1
10	El Salvador	99.1	306.6	153.3	23.0
11	Ethiopia	39.2	33.8	16.9	2.5
12	Fiji	-	33.4	16.7	2.5
13	Gabon	13.7	10.3	5.2	0.8
14	Grenada	3.8	6.0	3.0	0.5
15	Guinea	38.3	42.4	21.2	3.2
16	Honduras	172.3	331.6	165.8	24.9
17	Kenya	203.3	239.5	119.8	18.0
18	Lesotho	2.4	5.1	2.6	0.4
19	Madagascar	13.9	47.9	24.0	3.6
20	Malawi	50.9	57.7	28.9	4.3
21	Mauritius	19.1	29.1	14.6	2.2
22	Moldova	31.7	73.3	36.7	5.5
23	Mozambique	13.8	18.2	9.1	1.4
24	Namibia	22.1	21.9	11.0	1.6
25	Nepal	25.0	27.0	13.5	2.0
26	Nicaragua	52.6	82.8	41.4	6.2
27	Niger	39.9	32.0	16.0	2.4
28	Peru	347.0	289.5	144.8	21.7
29	Saint Kitts and Nevis	2.6	3.7	1.9	0.3
30	Saint Lucia	3.2	8.3	4.2	0.6
31	Saint Vincent and the Grenadines	2.3	1.8	0.9	0.1
32	Seychelles	0.8	2.8	1.4	0.2
33	Swaziland	0.1	24.6	12.3	1.8
34	Tanzania	88.9	253.9	127.0	19.0
35	Trinidad and Tobago	101.3	120.0	60.0	9.0
36	Uganda	12.2	12.8	6.4	1.0
37	Zambia	23.3	27.4	13.7	2.1
	Subtotal	1,981.2	2,920.9	1,460.5	219.1

LVC countries with RMP/RMP update approved in accordance to Decision 31/48					
1	Benin	54.6	59.9	30.0	4.5
2	Bolivia	78.8	75.7	37.9	5.7
3	Burkina Faso	25.4	36.3	18.2	2.7
4	Central African Republic	4.3	11.3	5.7	0.8
5	Comoros	2.7	2.5	1.3	0.2
6	Congo	11.4	11.9	6.0	0.9
7	Djibouti	20.8	21.1	21.1	21.1
8	Gambia	6.1	23.8	11.9	1.8
9	Georgia	21.5	22.5	11.3	1.7
10	Ghana	47.0	35.6	17.8	2.7
11	Guatemala	187.9	224.6	112.3	16.8
12	Guyana	24.4	53.2	26.6	4.0
13	Kuwait	419.9	480.4	240.2	36.0
14	Kyrgyzstan	53.5	72.8	36.4	5.5
15	Lao, PDR	44.6	43.3	21.7	3.2
16	Mali	29.2	108.1	54.1	8.1
17	Mongolia	13.9	10.6	5.3	0.8
18	Oman	282.1	248.4	124.2	18.6
19	Paraguay	153.5	146.9	73.5	11.0
20	Qatar	85.8	101.4	50.7	7.6
21	Senegal	116.5	155.8	77.9	11.7
22	Uruguay	106.8	199.1	99.6	14.9
23	Western Samoa	0.6	4.5	2.3	0.3
	Subtotal	1,791.4	2,149.7	1,085.4	180.7
LVC countries with total phase-out plans					
1	Bahamas	65.9	64.9	32.5	4.9
2	Jamaica	59.8	93.2	46.6	7.0
3	Kiribati	0.5	0.3	0.1	0.0
4	Marshall Islands	1.1	1.1	0.6	0.1
5	Micronesia		1.2	0.6	0.1
6	Palau		1.6	0.8	0.1
7	Solomon Islands	0.3	2.3	1.1	0.2
8	Tonga	-	1.7	0.9	0.1
9	Tuvalu	0.2	0.3	0.2	0.0
10	Vanuatu		1.2	0.6	0.1
	Subtotal	127.8	167.9	83.9	12.6
Total		3,900.3	5,238.5	2,629.8	412.4
