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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Sixty-second Meeting
Montreal, 29 November - 3 December 2010

**UPDATED MODEL ROLLING THREE-YEAR PHASE-OUT PLAN: 2011-2013
(DECISION 59/5)**

Introduction

1. The Secretariat is submitting herewith the model rolling three-year phase-out plan for the 2011-2013 triennium as a follow-up to decision 59/5(d). This paper contains:

- (a) An estimate of the maximum amounts of CFCs, halons, methyl bromide (MB), CTC and TCA that need to be funded in the 2011-2013 triennium to achieve compliance with the Montreal Protocol phase-out targets;
- (b) A brief analysis of HCFC consumption and production by Article 5 countries;
- (c) An analysis of the level of funding that has been agreed in principle by the Executive Committee for multi-year agreements;
- (d) An estimate of the funding level of projects submitted to the 62nd Meeting; and
- (e) A set of conclusions and recommendations.

Background

2. At the 37th Meeting, the Secretariat submitted a compliance-oriented model for the 2003-2005 triennium, which was adopted by the Executive Committee as a flexible guide for resource planning for the triennium. The Secretariat was also requested to prepare a model rolling three-year phase-out plan (the model) for the Multilateral Fund. Since then, it has updated the model after each meeting of the Executive Committee.

3. At its 59th Meeting, the Executive Committee considered the updated model for the 2010-2012 period and decided, *inter alia*:

- (a) To adopt the model three-year phase-out plan as a flexible guide for resource planning to phase out eligible ODS for the 2010-2012 triennium; and
- (b) To request the Secretariat to present an updated model for the 2011-2013 period to the last meeting of the Executive Committee in 2010 to provide guidance as relevant for the preparation of the 2011-2013 business plan of the Multilateral Fund (decision 59/5).

4. In line with decision 59/5, the Secretariat reviewed the model, taking into account the amounts of ODS to be phased out in projects and sectoral/national phase-out plans that have been approved by the Executive Committee since the 59th Meeting, and the latest data reported by Article 5 countries under Article 7 of the Montreal Protocol (data provided by the Ozone Secretariat as of 7 October 2010) and, when not available, the country programme data submitted to the Fund Secretariat (CP data).

5. A summary of the projects approved at the 59th, 60th and 61st Meetings of the Executive Committee is presented in Annex I to the present report. The assumptions on which the model is based are contained in Annex II, and the results of the analysis (by ODS and country) are presented in Annex III.

Scope of the model

6. Of the current 196 Parties to the Montreal Protocol¹, 147 countries are classified as operating under paragraph 1 of Article 5 of the Protocol (103 of these countries are considered

¹ As of 30 October 2010, all countries are Parties to the Montreal Protocol. The number of countries that are Parties to the London, Copenhagen, Montreal and Beijing Amendments are 195, 192, 181 and 165, respectively.

low-volume-consuming, or LVC, countries²). Three of the current 147 Article 5 countries were reclassified as operating under paragraph 1 of Article 5 and have agreed or were urged not to seek assistance from the Multilateral Fund³ and, therefore, have not been considered in the model.

7. The analysis covers the following ODS: CFCs, halons, methyl bromide (MB), CTC, TCA and HCFCs as per decision 54/5(b)(i). The institutional strengthening projects of all Article 5 countries will continue to be funded, as appropriate.

ODS phase-out in the 2011-2013 triennium excluding HCFCs

8. After taking into consideration the phase-out projects and activities approved by the Executive Committee at its 59th to 61st Meetings, the model was run to determine the maximum amounts of CFCs, halons, MB, CTC and TCA that need to be funded during the 2011-2013 triennium to achieve the 2010 Montreal Protocol phase-out targets.

CFCs

9. The analysis for CFCs includes a revision of: CFC consumption for non-low-volume-consuming (non-LVC) countries (41 countries); CFC consumption for low-volume-consuming (LVC) countries (103 countries); and CFC in the production sector (7 countries).

10. At its 60th Meeting, the Executive Committee decided, *inter alia*, that outstanding funding tranches of national phase-out plans (NPPs) for non-LVC countries or terminal phase-out management plans (TPMPs) for LVC countries not submitted to the 61st Meeting should be integrated into the relevant HCFC phase-out management plans (HPMPs) of the countries concerned (decision 60/11). Subsequently, at its 61st Meeting the Executive Committee decided to allow the submission of NPP and TPMP tranches for activities initially approved in 2008 or 2009 for three countries (Burundi, Eritrea and Iraq) up to the 63rd Meeting (decision 61/5(f)).

11. The 41 non-LVC countries⁴ each have an approved CFC phase-out plan addressing all the CFC consumption eligible for funding. The total CFC baseline for these countries is 147,737.4 ODP tonnes, and the 2008/2009 CFC consumption is 2,021.8 ODP tonnes. One country (Iraq) could submit a request for funding the last tranche of the NPP up to the 63rd Meeting.

12. The 103 LVC countries are divided into 3 groups (Table 2 of Annex III) according to the level of assistance they have received to meet Montreal Protocol limits:

- | | |
|-----------|--|
| Group I: | Consisting of 2 countries (Somalia and Timor-Leste) that do not have an approved country programme and refrigerant management plan (RMP) project. The total CFC baseline for these countries is 277.4 ODP tonnes, and the 2008/2009 CFC consumption is 6.0 ODP tonnes. |
| Group II: | Consisting of 3 countries, which have had RMPs approved in accordance with decision 31/48 ⁵ . The total CFC baseline for these countries is 170.1 ODP tonnes |

² Countries with CFC baseline consumption below 360 ODP ton.

³ These countries are: Republic of Korea (the), Singapore, South Africa and United Arab Emirates (the). At their 19th Meeting, the Parties decided that South Africa, as an Article 5 Party is eligible for technical and financial assistance from the Fund for fulfilling its commitments to phase out both production and consumption of HCFCs.

⁴ Romania has been reclassified as a non-Article 5 Party from 1 January 2008 (decision XIX/19). Romania is included in this document, since the Party received assistance from the Multilateral Fund for phasing out ODS consumption and production when it was classified as an Article 5 Party.

⁵ Article 5 countries are committed to achieving their 50 per cent and 85 per cent reduction targets without further assistance from the Fund, except for the continued funding of their institutional strengthening projects.

and the 2008/2009 reported consumption under Article 7/CP data is 14.0 ODP tonnes.

Group III: Consisting of 98 countries⁶, which have total phase-out plans approved and which will not seek further assistance from the Multilateral Fund to achieve phase-out by 2010. The total CFC baseline for these countries is 7,294.5 ODP tonnes, and the 2008/2009 CFC consumption is 167.3 ODP tonnes. One Article 5 country (Burundi) submitted the final tranche of the TPMP to the 62nd Meeting.

13. The CFC production sector can be described as follows:

- (a) Seven countries eligible for funding (Argentina, China, Democratic People's Republic of Korea (the), India, Mexico, Romania and Venezuela (Bolivarian Republic of), have a CFC production baseline (total of 88,614.1 ODP tonnes);
- (b) Projects for the closure of all CFC production facilities in all 7 countries have been approved by the Executive Committee and have been completed (excluding production of pharmaceutical grade CFCs in China). In 2009, only one country (China) reported production of CFCs (547.4 ODP tonnes);
- (c) One country (India) has submitted requests for tranches of already approved CFC phase-out closure plans to the 62nd Meeting.

Halons

14. The analysis for halons includes a revision of both halon consumption (75 countries) and halon production (2 countries). Table 3 of Annex III lists the 77 countries with an established halon baseline. These countries are divided into 2 major groups:

Group I: Consisting of 15 countries with a halon baseline but without reported halon consumption between 2007 and 2009 (except for one country (Somalia) that reported a halon consumption of 13.2 ODP tonnes in 2007). The total halon baseline for these countries is 62.9 ODP tonnes.

Group II: Consisting of 62 countries that have approved investment projects, halon banking and/or technical assistance programmes (at the national or regional levels) for the complete phase-out of halons. The total halon baseline of these countries is 42,706.2 ODP tonnes and the 2009 halon consumption is 1,035.9 ODP tonnes by two Article 5 countries (985.9 ODP tonnes consumed by China and 50 ODP tonnes by Saudi Arabia).

15. Two countries have an established halon production baseline (China, 40,993.0 ODP tonnes, and India, 288.8 ODP tonnes). One country (India) has reported zero production levels under Article 7 since 1998; the total reported halon production under Article 7 in 2007 for the other country (China) was 988.3 ODP tonnes. Projects for halon production closure have been funded in both countries. In 2009, only one country (China) reported production of halons (985.9 ODP tonnes);

⁶ Two countries (Armenia and Turkmenistan) have received funding outside the Multilateral Fund to achieve the complete phase-out of CFCs.

Methyl bromide

16. The analysis for MB includes a revision of MB consumption (145 countries) and MB production (2 countries). For the MB consumption sector, all countries are divided into the following 5 major groups (Table 4 of Annex III):

- Group I: Consisting of 8 countries with an established MB baseline but have not yet received assistance. The total MB baseline for these countries is 33.8 ODP tonnes and the 2008/2009 reported consumption under Article 7/CP data is 10.5 ODP tonnes;
- One country (Iraq) had submitted to the 62nd Meeting a project proposal for the complete phase-out of controlled uses of MB;
- One country (Tunisia) might need assistance to achieve the 20 per cent reduction target in a future year in accordance with decision XV/12⁷ of the 15th Meeting of the Parties;
- Five countries (Bahamas, Barbados, Ethiopia, Guyana and Vanuatu) had reported zero consumption of MB.
- Group II: Consisting of 10 countries with approved projects and remaining unfunded MB consumption of 566.0 ODP tonnes. The total MB baseline for these countries is 1,188.3 ODP tonnes and the 2008/2009 reported consumption under Article 7/CP data is 321.1 ODP tonnes.
- Group III: Consisting of 60 countries with approved projects that would achieve the complete phase-out of all controlled uses of MB. The total MB baseline for these countries is 7,667.5 ODP tonnes and the 2008/2009 reported consumption under Article 7/CP data is 2,296.4 ODP tonnes;
- Two countries (Morocco and Yemen) have submitted to the 62nd Meeting a request for a tranche of an already approved multi-year MB project.
- Group IV: Consisting of 64 countries with a MB baseline equal to zero, or no calculated baseline, or with no (or very little) current consumption.
- Group V: Consisting of 3 countries (Angola, Guinea, and Nepal) that are not yet Parties to the Copenhagen Amendment.

⁷ Through its decision XV/12, the Parties to the Montreal Protocol decided as follows:

1. That the Implementation Committee and Meeting of the Parties should defer the consideration of the compliance status of countries that use over 80 per cent of their consumption of methyl bromide on high-moisture dates until two years after the Technology and Economic Assessment Panel formally finds that there are alternatives to methyl bromide that are available for high moisture dates;
2. That the above provision shall apply so long as the relevant Party does not increase consumption of methyl bromide on products other than high-moisture dates beyond 2002 levels, and the Party has noted its commitment to minimizing the use of methyl bromide for dates to the extent necessary to ensure effective control of pests;
3. To request the Executive Committee to consider appropriate demonstration projects for alternatives on high-moisture dates, and to ensure that the results of those projects are shared with the Technology and Economic Assessment Panel.

17. The MB production sector can be described as follows:

- (a) Two countries (China and Romania) have a MB production baseline totalling 794.6 ODP tonnes. In 2009, one country (China) reported a production level of 241.9 ODP tonnes;
- (b) Projects for the closure of the MB production facilities in these 2 countries have been approved by the Executive Committee. One project has been completed (Romania) and the other is still under implementation (China).

CTC

18. The analysis for CTC includes a revision of both CTC consumption and CTC production. Table 5 of Annex III lists the 62 countries with an established CTC baseline and with current consumption (reported for 2008 and/or 2009), and countries with no established CTC baseline but with current reported consumption. The countries are divided into 2 major groups:

- Group I: Consisting of 7 countries with an established CTC baseline but have not yet received assistance. The total CTC baseline for these countries is 41.4 ODP tonnes. Only one country (Ecuador) reported a total consumption of 0.1 ODP tonnes of CTC in 2009 (the other 6 countries had reported zero consumption).
- Group II: Consisting of 55 countries⁸ with approved CTC phase-out plans, investment projects or technical assistance programmes for the complete phase-out of CTC consumption. The total CTC baseline for these countries is 67,295.0 ODP tonnes and the 2009 reported consumption under Article 7/CP data is -200.6 ODP tonnes.

19. The CTC production sector can be described as follows:

- (a) Five countries (Brazil⁹, China, Democratic People's Republic of Korea (the), India and Romania), have a CTC production baseline totalling 68,825.9 ODP tonnes;
- (b) Projects for the complete phase-out of CTC in the production and consumption sectors in 4 countries (China, Democratic People's Republic of Korea (the), India, and Romania) with a total CTC production baseline of 57,196.3 ODP tonnes have been approved by the Executive Committee. One project (Romania) has been completed.

TCA

20. The analysis for TCA includes a revision of both TCA consumption and TCA production. Table 6 of Annex III lists 47 countries with an established TCA baseline. These countries are divided into two major groups:

⁸ The CTC baseline in 1 country (Venezuela (Bolivarian Republic of)) is 1,107.2 ODP ton. Before 2000, CTC consumption in this country was relatively low, except for 1995 and 1999 when the reported consumption was 1,708.8 and 3,321.5 ODP ton, respectively. From 2000, CTC consumption has been nil. Since the country is a CFC producer and has reported very low consumption of CTC, it would appear that the consumption reported in 1995 and 1999 could have been related to feedstock applications. Therefore, the model has not taken into account the CTC baseline for this country.

⁹ The model has not taken into account the phase-out of the CTC production facilities in Brazil (baseline of 11,629.6 ODP ton) because no information is available on the level of controlled and/or other uses of CTC (e.g., feedstock) and the eligibility for funding (e.g., foreign ownership of the production facilities).

- Group I: Consisting of 9 countries with an established TCA baseline but have not yet received assistance. The total TCA baseline for these countries is 225.8 ODP tonnes and the 2009 reported consumption under Article 7/CP data is zero.
- Group II: Consisting of 38 countries with an approved TCA phase-out plan, investment projects or technical assistance programmes for the complete phase-out of TCA consumption. The total TCA baseline for these countries is 1,122.7 ODP tonnes and the 2009 reported consumption under Article 7/CP data is 99.3 ODP tonnes (one country (China) reported a total consumption of 83.6 ODP tonnes of TCA in 2009).

21. The TCA production sector can be described as follows:
- (a) Three countries (Brazil¹⁰, China and Democratic People's Republic of Korea (the)), have a TCA production baseline totalling 152.9 ODP tonnes;
- (b) Projects for the complete phase-out of TCA in the production sector have been approved by the Executive Committee in 2 countries (China and Democratic People's Republic of Korea (the)) with a total TCA production baseline of 120.5 ODP tonnes.

ODS reductions to be achieved in 2011-2013 from approved phase-out plans and projects

22. The results of the model are presented in Tables 1 to 10 of Annex III to this document. The maximum total amount of ODS that needs to be funded during the 2011-2013 triennium is 185.9 ODP tonnes of MB.

23. The Executive Committee should also be cognizant of the fact that:
- (a) The latest reported consumption of ODSs excluding HCFCs by Article 5 countries represents 2.09 per cent of the sum of their ODS baselines for compliance. Except for MB and TCA (with compliance phase-out targets by 1 January 2015) the latest reported consumption for the other ODSs (i.e., CFC, halon and CTC) is less than 2.5 per cent of the sum of their respective baselines as shown below.

ODS (ODP tonnes)	Baseline	2008/2009	% of baseline
CFC non-LVC countries	147,737.4	2,021.8	1.37%
CFC LVC countries	7,742.0	187.3	2.42%
Halon	42,769.1	1,035.9	2.42%
MB	8,903.8	2,628.0	29.52%
CTC	67,336.4	-200.5	-0.30%
TCA	1,348.5	99.3	7.36%
Total	275,837.2	5,771.8	2.09%

- (b) Some 14,579.3 ODP¹¹ ton of ODS consumption have yet to be phased out in approved multi-year sectoral and national phase-out plans during the remainder of 2010 and in the 2011-2013 triennium; and

¹⁰ The model has not taken into account the phase-out of TCA production facilities in Brazil (baseline of 32.4 ODP ton), taking into consideration that, since 2000, production of TCA has been nil.

¹¹ Data available as of the end of 2010.

- (c) 41 national ODS phase-out plans for non-LVC countries, 98 TPMPs for LVC countries¹², and 12 phase-out plans in the production sector in 7 non-LVC countries are under current implementation.

Analysis of HCFC phase-out

24. At their 19th Meeting, the Parties to the Montreal Protocol agreed to accelerate the phase-out of the production and consumption of HCFCs (decision XIX/6).¹³ Accordingly, the compliance-oriented model considered by the Executive Committee at its 56th Meeting included, for the first time, the 2002-2007 consumption and production levels of HCFCs as reported under Article 7 of the Protocol.

25. The updated model rolling three-year phase-out plan considered by the Executive Committee at its 59th Meeting included a preliminary analysis of HCFC consumption and production in Article 5 countries. The analysis was conducted solely on the basis of HCFC consumption reported by Article 5 countries and did not take into consideration issues related to funding eligibility, HCFC consumption by manufacturing enterprises established after the cut-off date, second-stage conversions, and HCFC-141b contained in imported pre-blended polyols not reported as consumption under Article 7 of the Montreal Protocol. Since then, a number of relevant decisions on HCFCs have been adopted by the Executive Committee. Specifically,

- (a) At the 60th Meeting, it was decided not to consider any projects to convert HCFC-based manufacturing capacity installed after 21 September 2007; the principles in regard to second-stage conversion projects for the first stage of HPMP implementation were agreed; Article 5 countries were allowed to choose between the most recent reported HCFC consumption under Article 7 of the Montreal Protocol and the average of consumption forecast for 2009 and 2010, in calculating starting points for aggregate reductions in HCFC consumption (decision 60/44);
- (b) At the 61st Meeting, an approach for providing assistance to phase-out HCFC-141b contained in imported pre-blended polyols in Article 5 countries that are not reporting that amount under Article 7 of the Montreal Protocol was agreed (decision 61/47);
- (c) At the 61st Meeting, the revised 2010-2014 consolidated business plan of the Multilateral Fund was noted by the Executive Committee. The HCFC consumption baseline used in the business plan to assess the level of reduction in HCFC consumption by all Article 5 countries was 31,277.4 ODP tonnes¹⁴.

26. The analysis of HCFC consumption is based on the following considerations:

- (a) HCFC consumption data reported under Article 7 of the Montreal Protocol for the period 2000 to 2009. Not all Article 5 countries have reported consumption for all HCFCs and/or for all years of the 2000 to 2009 period. For countries that had not reported their 2009 ODS consumption data, the same HCFC consumption as for 2008 was considered for 2009;

¹² Including TPMPs for Armenia and Turkmenistan funded outside the Multilateral Fund.

¹³ For Article 5 Parties, the accelerated phase-out of production and consumption of HCFCs was agreed on the basis of the following steps: freeze in 2013; 10 per cent reduction by 2015; 35 per cent by 2020; 67.5 per cent by 2025; and phase-out in 2030 while allowing for servicing an annual average of 2.5 per cent during the 2030–2040 period.

¹⁴ The HCFC baseline was calculated from the 2008 reported consumption under Article 7 of the Montreal Protocol. The 2009 and 2010 forecasted consumption was based on a growth rate of 8 per cent for each year.

- (b) In several countries, wide fluctuations in consumption of the same type of HCFC occurred during the reporting period¹⁵;
- (c) HCFC consumption by three Article 5 countries, which have agreed not to seek assistance from the Fund (Republic of Korea, Singapore and United Arab Emirates), has not been included. The total 2008/2009 reported HCFC consumption under Article 7 for these countries is 2,497.8 ODP tonnes;
- (d) The 2009 HCFC consumption by one country (18,624.0 ODP tonnes, China) represents over 58.2 per cent of the total consumption in Article 5 countries (31,996.4 ODP tonnes);
- (e) Of the 8 HCFCs¹⁶ currently consumed by Article 5 countries, 3 HCFCs (i.e., HCFC-22, HCFC-141b and HCFC-142b) represents over 99 per cent of total consumption in all countries. Although the sectoral distribution of HCFC consumption¹⁷ will only be known once the countries submit their HPMPs, it is expected that most of HCFC-22 consumption will be concentrated in the refrigeration and air conditioning sectors, while that of HCFC-141b and HCFC-142b will be in the foam sector;
- (f) Not every Article 5 country that imported pre-mixed polyols containing HCFC-141b had reported the HCFC-141b as “consumption” (according to the definition of the Montreal Protocol);
- (g) Several refrigerants currently available in the market are blends of different substances including HCFCs. It is not known if Article 5 countries are reporting HCFCs contained in these blends as consumption.

27. The Secretariat used annual growth rates to forecast HCFC consumption for the 2010-2012 period. For consumption in 2010 the Secretariat applied a rate of 8 per cent which was similar to the growth rate used in the revised consolidated 2010-2014 business plan noted by the Executive Committee at its 61st Meeting. For consumption in 2011 and 2012 an annual rate of 6 per cent, similar to the growth rate used in the updated model rolling three-year phase-out plan submitted to the 59th Meeting was applied for each year.

28. Based on the information currently available on the sectoral distribution of HCFC consumption by Article 5 countries, the Secretariat categorized the countries into the following four groups¹⁸:

- Group I: Consisting of 96 Article 5 countries with consumption of mainly HCFC-22. The total 2009 HCFC consumption of these countries is 1,230.3 ODP tonnes. It is assumed that these countries will meet their HCFC phase-out control targets mainly through reduction of HCFC-22 consumption in the refrigeration servicing sub-sector;
- Group II: Consisting of 12 Article 5 countries with reported consumption mainly of HCFC-22 and relatively low consumption (less than 15 per cent of the total) of

¹⁵ The issue of the high levels of recorded HCFC consumption in the recent past is presented to the 62nd Meeting in document UNEP/OzL.Pro/ExCom/62/10 (overview of issues identified during project review).

¹⁶ HCFC-123, HCFC-124, HCFC-225, HCFC-225ca, HCFC-225cb, HCFC-141b, HCFC-142b, and HCFC-22.

¹⁷ HCFCs can be used in many of the following applications: as a foam blowing and/or co-blowing agent; as a stand-alone refrigerant (HCFC-22) and/or as a component of a refrigerant mixture (HCFC-141b, HCFC-22) used in the manufacturing, servicing and/or assembly of refrigeration systems; as a solvent (HCFC-141b); as a propellant in aerosol applications; or as a component of fire extinguisher systems.

¹⁸ This grouping should be revised once the detailed sectoral distribution of HCFCs in each Article 5 country is known.

HCFC-141b and/or HCFC-142b. The total 2009 HCFC consumption of these countries is 447.4 ODP tonnes. It is assumed that these countries might meet their 2013 and 2015 HCFC phase-out control targets mainly through reduction of HCFC-141b in the foam manufacturing sector and possibly also through reductions in HCFC-22 consumption in the refrigeration sector;

Group III: Consisting of 35 Article 5 countries with reported consumption of HCFC-22, HCFC-141b and/or HCFC-142b. The total 2009 HCFC consumption of these countries is 11,694.7 ODP tonnes. It is assumed that these countries might meet their 2013 and 2015 HCFC phase-out control targets mainly through reduction of HCFC-141b in the foam manufacturing sector and HCFC-22 consumption in the refrigeration manufacturing sector;

Group IV: Consisting of one country (China) with large levels of reported consumption of HCFC-22, HCFC-141b, and HCFC-142b (18,624.0 ODP tonnes in 2009). This country might be able to meet at least the 2020 phase out target by reducing its HCFC consumption in the manufacturing sector.

29. The extrapolated HCFC consumption data for 2009-2012 and the reductions in consumption established by the Parties under decision XIX/6 for the years 2013, 2015, 2020 and 2025 for each the four groups is presented below¹⁹ (Table 7 of Annex III lists HCFC consumption by each Article 5 Party).

Group	HCFC consumption (ODP tonnes)							
	2009	2010	2011	2012	2013	2015	2020	2025
Group I	1,230	1,329	1,409	1,493	1,279	1,151	831	416
Group II	447	483	512	543	465	419	303	151
Group III	11,695	12,630	13,388	14,191	12,163	10,946	7,906	3,953
Group IV	18,624	21,127	22,394	23,738	19,875	17,888	12,919	6,460
Total	31,996	35,569	37,703	39,965	33,782	30,404	21,959	10,980

30. In accordance with the definition of the starting point for aggregate reduction in HCFC consumption, the level of HCFC consumption to be funded through the Multilateral Fund could be in the order 34,000 ODP tonnes. The actual amount would be known when all Article 5 countries had selected their starting point.

Reductions in HCFC consumption

31. Taking into consideration the project implementation time lag and the following assumptions, HCFC consumption reduction levels are shown in the table below (Table 7A of Annex III presents the proposed reductions levels of HCFC consumption by each Article 5 Party):

- (a) For meeting the 2013 HCFC compliance target, 3,922 ODP tonnes would need to be phased out from the 2011 HCFC consumption forecast of 37,703 ODP tonnes;
- (b) HCFC consumption reduction levels to meet the 2015 compliance level (i.e., from 33,782 ODP tonnes in 2013 to 30,404 ODP tonnes in 2015) need to be realized in 2013 and 2014 (i.e., 50 per cent reduction each year);

¹⁹ The extrapolation of the TEAP Replenishment Task Force was based on 2000 to 2006 reported HCFC consumption, while the extrapolated consumption in this report is based on 2000 to 2008 reported HCFC consumption. HCFC consumption level calculated by the Task Force in 2007 was 24,805 ODP ton compared to 29,519 ODP ton reported under Article 7 (i.e., a difference of 5,014 ODP ton). The difference for 2008 is expected to be about 1,000 ODP ton (this will be known once all Article 5 countries report their 2008 consumption under Article 7 of the Protocol).

- (c) HCFC consumption reduction levels to meet the 2020 compliance level (i.e., from 30,404 ODP tonnes in 2015 to 21,959 ODP tonnes in 2020) need to be realized between 2015 and 2019 (i.e., 20 per cent reduction each year).

Group	HCFC consumption reduction levels (ODP tonnes)							
	2012	2013	2014	2015	2016	2017	2018	2019
Group I	130	64	64	64	64	64	64	64
Group II	47	23	23	23	23	23	23	23
Group III	1,226	608	608	608	608	608	608	608
Group IV	2,519	994	994	994	994	994	994	994
Total	3,922	1,689	1,689	1,689	1,689	1,689	1,689	1,689

32. For meeting the HCFC compliance targets of 2013 (freeze) and 2015 (10 per cent reduction), nearly 7,300 ODP tonnes would need to be phased out from the 2011 HCFC consumption forecast of 37,703 ODP tonnes. If this were to be the case, the remaining HCFC consumption eligible for funding would be 26,700 ODP tonnes (considering a starting point for aggregate reduction in HCFC consumption in all Article 5 countries of 34,000 ODP tonnes).

HCFC production

33. HCFCs are produced in six Article 5 countries²⁰ (Argentina, China, the Democratic People's Republic of Korea, India, Mexico, and Venezuela (Bolivarian Republic of)), with the following production levels over the 2006-2009 period.

Country	Production of HCFCs (ODP tonnes)			
	2006	2007	2008	2009
Argentina	11.2	45.0	157.1	215.3
China	24,265.2	27,482.4	24,985.0	28,475.9
Democratic People's Republic of Korea			21.7	27.7
India	1,589.0	2,211.7	2,258.2	2,562.1
Mexico	687.8	778.3	771.2	699.9
Venezuela (Bolivarian Republic of)	55.2	63.9	76.5	126.9
Total	26,608.4	30,581.3	28,269.7	32,107.8

34. The Executive Committee is currently considering policy issues related to phase-out in the production sector, including the funding eligibility of several HCFC-22 production facilities in some countries, and modalities for reducing levels of consumption according to the phase-out schedule agreed by the Parties at their 19th Meeting. An analysis of the HCFC production sector will be presented once these issues have been addressed by the Executive Committee.²¹

Level of funding agreed in principle

35. For the remainder of 2010 and in the 2011-2013 triennium, the total level of funding approved in principle and other funding commitments (i.e., Fund Secretariat and Executive Committee meetings, institutional strengthening projects, UNEP's CAP and core units of the implementing agencies), amounts to US \$134,819,990.

²⁰ HCFCs are also produced in Republic of Korea (the): 372.5 ODP ton and 363.6 ODP ton of HCFCs were produced in 2007 and 2008 respectively

²¹ If funding for the reduction in HCFC production is based on compensation of plant closure, as was done for CFC and halons, it is likely that funding would be needed only in 2012 or 2013.

Funding level of projects submitted to the 62nd Meeting

36. The total value of new multi-year projects (including national/sectoral phase-out plans in the production and consumption sectors, HCFC phase out activities submitted in the context of HPMPs or as stand-alone HCFC sectoral phase-out plans and investment projects, and ODS destruction projects) as submitted to the 62nd Meeting, is nearly US \$681 million²² (prior to determination of the eligibility of their incremental costs). However, the exact amounts and the funding implications for the 2011-2013 triennium will be known only at the close of the 62nd Meeting of the Executive Committee.

Conclusions

37. Phase-out plans addressing all eligible amounts of CFCs, halons CTC and TCA to enable compliance with the Protocol's phase-out reduction targets have been approved for all Article 5 countries, except for a few LVC countries where unfunded activities for CFC phase-out would be considered in the context of their HPMPs. To meet the 2015 10 per cent reduction target, an additional 185.9 ODP tonnes of MB would need to be addressed.

38. In addition to the amounts of ODS phase-out, excluding HCFCs, to be funded during the remainder of 2010 and in the 2011-2013 triennium the Executive Committee should be cognizant of the fact that:

- (a) Some 14,579.3 ODP tonnes of ODS consumption have yet to be phased out in approved multi-year sectoral and national phase-out plans during the remainder of 2010 and in the 2011-2013 triennium; and
- (b) 41 national ODS phase-out plans for non-LVC countries, 98 TPMPs for LVC countries²³, and 12 phase-out plans in the production sector in 7 non-LVC countries were currently being implemented.

39. Based on the HCFC consumption reported by Article 5 countries under the Montreal Protocol up to 2009, the baseline for compliance has been estimated at 33,800 ODP tonnes. For meeting the 2013 and 2015 HCFC compliance targets, nearly 7,300 ODP tonnes would need to be phased out from the consumption forecast of 37,703 ODP tonnes in 2011. On this basis, the remaining HCFC consumption eligible for funding would be 26,700 ODP tonnes.

Recommendations

40. The Executive Committee may wish to consider:

- (a) Adopting the 2011-2013 model three-year phase-out plan as a flexible guide for resource planning for the corresponding triennium;
- (b) Urging Article 5 countries with approved but not implemented projects, and the relevant implementing and bilateral agencies, to accelerate the pace of implementation during the 2011-2013 triennium;
- (c) Urging bilateral and implementing agencies to work with those countries that have been identified as being in need of immediate assistance to meet the 2013 and 2015 Montreal Protocol phase-out targets, and include activities in their 2011-2013 business plans as appropriate;

²² This amount includes funding tranches for up to 2014 for non-LVC countries and up to 2019 for LVC countries. A few LVC countries requested funding tranches after 2019.

²³ Including TPMPs for Armenia and Turkmenistan funded outside the Multilateral Fund.

- (d) Requesting the Secretariat to present an updated model three-year rolling phase-out plan for the years 2012-2014 to the last meeting in 2011 to provide guidance, as relevant, for the preparation of the 2012-2014 business plan of the Multilateral Fund;
- (e) Noting that:
 - (i) Some 14,579.3 ODP tonnes of ODS consumption have yet to be phased out in approved multi-year sectoral and national phase-out plans during the remainder of 2010 and in the 2011-2013 triennium; and
 - (ii) 41 national ODS phase-out plans for non-low-volume-consuming (non-LVC) countries, 98 terminal phase-out management plans for LVC countries, and 12 phase-out plans in the production sector in 7 non-LVC countries were currently being implemented.

Annex I

SUMMARY OF THE PROJECTS APPROVED AT THE 59TH, 60TH AND 61ST MEETINGS OF THE EXECUTIVE COMMITTEE

Sector/country	Project
Foam	
China	Conversion from HCFC-141b-based to HFC-245fa-based spray polyurethane foam at Harbin Tianshuo Building Materials Co. Ltd.
Colombia	Conversion plan from HCFCs to hydrocarbons in the production of polyurethane rigid insulation foam in the domestic refrigeration subsector (Mabe Colombia, Industrias Haceb, Challenger and Indusel S.A.)
Croatia	Phase-out of HCFC-141b from the manufacturing of polyurethane rigid and integral skin foams at Poly-Mix
Croatia	Phase-out of HCFC-141b from the manufacturing of polyurethane rigid foam at Pavusin
Dominican Republic	Conversion from HCFC-141b in the manufacture of polyurethane rigid insulation foam for commercial refrigerators
Mexico	Conversion from HCFC-141b in the manufacture of polyurethane rigid insulation foam for domestic refrigerators at Mabe Mexico
Pakistan	Phase-out of HCFC-141b from the manufacturing of insulation PU rigid foam at United Refrigeration, HNR (Haier), Varioline Intercool and Shadman Electronics companies
Pakistan	Phase-out of HCFC-141b from the manufacturing of insulation polyurethane rigid foam at Dawlance
Fumigant	
Chile	National phase-out of methyl bromide, terminal project (first tranche)
China	National phase-out of methyl bromide (phase II, fifth tranche)
Costa Rica	Total methyl bromide phase-out used as a fumigant in melons, cut flowers, bananas, tobacco seedbeds and nurseries, excluding QPS applications (tranche V)
Guatemala	National phase-out of methyl bromide (phase II, first tranche)
Honduras	National methyl bromide phase-out plan, phase II (fourth tranche)
Mexico	National methyl bromide phase-out plan (second tranche)
Mozambique	Technical assistance for the elimination of controlled uses of methyl bromide in soil fumigation
Turkmenistan	Technical assistance for the elimination of methyl bromide in post harvest sector
Viet Nam	National phase-out plan of out methyl bromide (second tranche)
Refrigeration	
Argentina	Phase-out of HCFC-22 in the room and unitary air-conditioning equipment manufacturing sector
China	Refrigeration servicing sector CFC phase-out plan (sixth tranche)
Jordan	Phase-out of HCFC-22 and HCFC-141b from the manufacture of unitary air-conditioning equipment at Petra Engineering Industries Co.
Production	
India	CFC production sector gradual phase-out: 2009 annual implementation plan
India	Accelerated CFC production phase-out (first tranche)
Solvent	
China	ODS phase-out in China solvent sector: 2010 annual programme
Phase-out plans	
Antigua and Barbuda	CFC phase-out management plan (second tranche)
Bahrain	Terminal phase-out management plan (second tranche)
Bangladesh	National ODS phase-out plan (fifth and sixth tranches)
Benin	Terminal phase-out management plan (second tranche)
Botswana	Terminal phase-out management plan (second tranche)
Brazil	National CFC phase-out plan (eighth tranche)
Cambodia	HCFC phase-out management plan (phase I, first tranche)

Sector/country	Project
Cape Verde	Terminal phase-out management plan for CFCs (second tranche)
Central African Republic	Terminal phase-out management plan (second tranche)
Chile	Servicing sector terminal CFC phase-out plan (second tranche)
Congo	Terminal phase-out management plan (second tranche)
Croatia	HCFC phase-out management plan (phase I, first tranche)
Cuba	National ODS phase-out plan for CFCs (2009 and 2010 plans)
Democratic Republic of the Congo (the)	National CFC phase-out plan (third tranche)
Djibouti	Terminal phase out management plan for CFCs (second tranche)
Dominica	Terminal CFC phase-out management plan (fourth tranche)
Egypt	National CFC phase-out plan (fourth and fifth tranches)
Ghana	HCFC phase-out management plan (phase I, first tranche)
Grenada	Terminal phase-out management plan (third tranche)
Guinea	Terminal phase-out management plan (second tranche)
Guinea-Bissau	Terminal phase-out management plan (second tranche)
Guyana	Terminal phase-out management plan (second tranche)
Honduras	Terminal phase-out management plan (second tranche)
Kyrgyzstan	Terminal CFC phase-out management plan (third tranche)
Lao People's Democratic Republic (the)	Terminal phase-out management plan (second tranche)
Malaysia	National CFC phase-out plan: 2009 annual programme
Maldives	HCFC phase-out management plan (first tranche)
Mozambique	Terminal phase-out management plan (second tranche)
Nicaragua	Terminal phase-out management plan (second tranche)
Nigeria	National CFC phase-out plan (seventh and eighth tranche)
Paraguay	Terminal phase-out management plan (fourth tranche)
Qatar	Terminal phase-out management plan (second tranche)
Saint Vincent and the Grenadines	Terminal phase out management plan for CFCs (fourth tranche)
Saudi Arabia	National phase-out plan (second tranche)
Serbia	National CFC phase-out plan (fourth and fifth tranches)
Seychelles	Terminal ODS phase-out management plan (third tranche)
Sierra Leone	Terminal phase-out management plan (second tranche)
Swaziland	Terminal phase-out management plan (second tranche)
Thailand	National CFC phase-out plan: 2010-2012 annual implementation plan
the former Yugoslav Republic of Macedonia	Terminal phase-out management plan for CFCs (fifth tranche)
the former Yugoslav Republic of Macedonia	HCFC phase-out management plan (phase I, first tranche)
Tunisia	National ODS phase-out plan (second tranche)
Uganda	Terminal phase-out management plan (second tranche)
Uruguay	Terminal phase-out management plan (third tranche)
Yemen	National ODS phase-out plan (second tranche)
Zimbabwe	National phase-out of Annex A (Group I) substances (fourth tranche)
Destruction	
Nepal	Destruction of confiscated ODS
HCFC demonstration	
Turkey	Validation of the use of HFO-1234ze as blowing agent in the manufacture of extruded polystyrene foam boardstock (phase I)
China	Demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-conditioning Manufacturing Company
China	Demonstration sub-project for conversion of room air-conditioning compressor manufacturing from HCFC-22 to propane at Guangdong Meizhi Co.
China	Demonstration project for conversion from HCFC-22 technology to Ammonia/CO2 technology in the manufacture of two-stage refrigeration systems

Sector/country	Project
	for cold storage and freezing applications at Yantai Moon Group Co. Ltd.
China	Demonstration project for conversion from HCFC-22 technology to HFC-32 technology in the manufacture of commercial air-source chillers/heat pumps at Tsinghua Tong Fang Artificial Environment Co. Ltd.
China	Conversion of the foam part of Jiangsu Huaiyin Huihuang Solar Co. Ltd. from HCFC-141b to cyclopentane
China	Conversion demonstration from HCFC-141b-based to cyclopentane-based pre-blended polyol in the manufacture of rigid polyurethane foam at Guangdong Wanhua Rongwei Polyurethane Co. Ltd
Colombia	Demonstration project to validate the use of super-critical CO ₂ in the manufacture of sprayed polyurethane rigid foam

Annex II

ASSUMPTIONS USED FOR DEVELOPING THE 2010-2012 PHASE-OUT PLAN OF THE MULTILATERAL FUND

CFCs

1. For Annex A CFCs, countries were divided into two categories: large-volume-consuming Article 5 countries, or non-LVC countries, (countries with a compliance baseline for Annex A Group I substances greater than 360 ODP tonnes); and low-volume-consuming countries, or LVC countries.

CFCs for non-LVC countries

2. National phase-out plans addressing all eligible amounts of CFCs to enable compliance with the Protocol's CFC phase-out reduction targets have been approved for all non-LVC countries.

CFCs for LVC countries

3. In light of decision 60/11, activities that have not been funded to phase-out CFC consumption should be integrated into the relevant HPMPs of the countries concerned.

CFC production sector

4. Projects for the closure of all CFC production facilities have been approved.

Halon

5. No additional funding would be required to meet the 2010 phase-out limit.

Methyl bromide

6. Except for small MB consumption in two countries that have temporarily been exempted from achieving the 2005 MB phase-out limit (decision XV/12 of the 15th Meeting of the Parties), 285.9 ODP tonnes are proposed for phase out to meet the 2015 phase-out limit.

CTC

7. No additional funding would be required to meet the 2010 phase-out limit.

8. The model has not taken into consideration CTC consumption or production in the following countries:

- (a) CTC consumption in one country (Venezuela (Bolivarian Republic of)), with a CTC baseline of 1,107.2 ODP tonnes. Before 2000, CTC consumption in the country was relatively low, except for 1995 and 1999 when the reported consumption was 1,708 and 3,321 ODP tonnes, respectively. Since 2000, CTC consumption has been nil. Since the country is a CFC producer and has reported very low consumption of CTC, it would appear that the consumption reported in 1995 and 1999 could have been related with feedstock applications; and
- (b) CTC production in one country (Brazil with a baseline of 11,629.6 ODP tonnes) because no information is available on the level of controlled uses of CTC (e.g., feedstock), the eligibility for funding (e.g., foreign ownership of the production facilities).

TCA

9. No additional funding would be required to meet the 2010 phase-out limit.

10. The model has not taken into consideration TCA consumption or production in one country (Brazil with a TCA production baseline of 32.4). Since 2000, the TCA production reported by this country has been zero.

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