

行政院所屬各機關因公出國人員出國報告書 (出國類別：國際會議)

蒙特婁議定書第二十一次締約國會議 與會情形報告

服務機關： 行政院環境保護署
姓名職稱： 簡慧貞 副處長
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外交部
江月琇 組長

派赴國家： 埃及—加利卜港
 (Ghalib Port, Egypt)

出國期間： 98年11月3日至11月8日

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摘要

蒙特婁議定書第 21 次締約國會議（MOP21）於 98 年 11 月 4 日至 11 月 8 日在埃及－加利卜港（Port Ghalib, Egypt）舉行，本次會議遵循往例以財團法人工業技術研究院名義，非政府組織(NGO)身分參加，由本署空保處簡副處長慧貞率團，謝助理環境技術師議輝；外交部條約法律司江組長月琇；工業技術研究院王經理壬、楊研究員斐喬，共計 5 人與會。

本次會議主要討論議題包括，計量吸入器（Metered Dose Inhalers, MDI）的氟氯化碳階段性生產、2010 和 2011 年必要用途豁免提名的提案、技術與經濟評估小組報告溴化甲烷使用於檢疫與裝運前（Quarantine and Preshipment, QPS）的相關議題、處理與遵約有關的庫存消耗臭氧物質的提案、地區性海龍供應失衡情形評估、高全球暖化潛勢物質替代（Ozone Depletion Substances, ODS）等。

本次會議接見相關重要與人員包括，埃及環保部部長 Eng. Maged George 及副部長 Dr. Mawaheb Abou、UNEP 臭氧秘書處副執行秘書 Mr. Paul Horwitz（前美國環保署代表團團長）、UNEP 臭氧秘書處法律事務組組長 Mr. Gilber Bankobez、歐盟代表顧問 Dr. Melanie Miller、巴勒斯坦代表 Mr. Jamil Mtoor、印度代表團團長 Dr. B. P. Nilaratna、斯里蘭卡代表、TEAP 主席 Mr. Stephen O. Andersen（美國環保署 Climate Protection Partnerships Division 組長）等，於會場週邊我國團長並樂意接受 UNEP 現場訪問，充分表達台灣在蒙特婁議定書列管物質管制上的努力。參與本次會議，有助於掌握趨勢及研擬我國因應策略，對於本署國際環保業務之推動，極有助益。

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蒙特婁議定書第二十一屆締約國會議與會情形報告

壹、 前言

- 一、 自 1980 年代初期臭氧層破洞首度被觀察到後，南北極臭氧層厚度極據變化（從 100 至 400 Dobson Unit，而厚度若在 220 Dobson Unit 以下，即稱為臭氧層破洞），自此，臭氧層的破壞逐漸成為全球生態環境議題，聯合國環境規劃署（United Nations Environment Program， UNEP）於 1985 年邀集各國共同攜手研商對策，並於當年度 3 月在奧地利維也納連署 28 個國家共同簽訂保護臭氧層之「維也納公約（Vienna Convention for the Protection of the Ozone Layer）」，以保護人類健康和環境，使免受足以改變或可能改變臭氧層的人類活動所造成的或可能造成的不利影響，並決議研訂具體管制措施管制臭氧層破洞，至今維也納公約已受到全球 196 個國家批准。

- 二、 然而維也納公約只是一個促進國家間合作研究臭氧機制、檢視排放現況以及相關資訊交流的架構協議文，其中並無訂定任何具約束力的減量目標，有鑒於此，為致力減少產生及使用破壞臭氧層物質（Ozone Depleting Substances， ODS）已補維也納公約之不足，聯合國環境規劃署於 1987 年 9 月 16 日於加拿大蒙特婁市再次召開會議，進一步邀集當時的 24 個國家及歐洲經濟體簽署更具管制效力之「蒙特婁議定書（Montreal Protocol on Substances that Deplete the Ozone Layer）」，並明確管制 5 種氟氯碳化物（CFCs）及 3 種海龍（Halons）列為管制物質，而自 1989 年 1 月 1 日蒙特婁議定書正式生效後，逐步要求各締約國，包括已開發國家（non-Article 5 國家）及開發中國家（Article 5），分別自 1989 年及 1996 年起分階段削減 CFCs 與 Halons 之生產與消費量。至 2009 年 9 月 16 日東帝汶民主共和國加入後，聯合國環境規劃署並正式宣佈聯合國 196 個國家皆已承諾遵循之「蒙特婁議定書」國際環保公約。

三、隨後為加快削減破壞臭氧層物質使用及範圍，各締約國持續針對各種 ODS 協商新增之物質與管制規定，持續修訂蒙特婁議定書內容，陸續補充於「修正案 (Amendment)」及「調整案 (Adjustment)」中。

「修正案」是用來增加新的管制方案或物質，需經一定數目的締約國批准後方具有效力；「調整案」則是用來調整現有管制措施內容，協商決議一旦採用，即自動生效，無需再經過締約國批准程序。

四、前揭修正案包括，1990 年的倫敦修正案、1992 年的哥本哈根修正案、1997 年的蒙特婁修正案及 1999 年的北京修正案，公約、議定書及各修正案批准情形如表一：

(一) 倫敦修正案：1990 年 6 月於英國倫敦召開第 2 次締約國大會 (MOP2)，修訂議定書之管制措施，擴大管制物質範圍，新增 10 種 CFCs、四氯化碳(Carbon Tetrachloride)、三氯乙烷 (methyl chloroform)、1,1,1-三氯乙烷(1,1,1-trichloroethane)於 ODS 管制清單中，並決議五種 CFCs 及三種海龍(Halons)於 2000 年之前停止生產。此外，設立多邊基金 (Multilateral Fund) 促進議定書的推廣執行，該基金係用來資助開發中國家執行議定書減量方案時可能需承擔的成本與舉辦資訊擴散活動。至今有 194 個締約國批准此修正案。

(二) 哥本哈根修正案：1992 年 11 月於丹麥哥本哈根召開第 4 次締約國大會 (MOP4)，再度擴大管制物質範圍，包括新增溴化甲烷 (Methyl Bromide)、氟溴烴 (Hydrobromofluorocarbons, HBFCs) 及氟氯烴 (HCFCs) 管制，另決議將現有管制物質之削減時程大幅提前，自 1994 年 1 月 1 日起除必要用途外禁止生產海龍，自 1996 年 1 月 1 日起將 CFCs、四氯化碳、1,1,1-三氯乙烷、HBFC 等物質的消費量削減至零，並啟動「未遵約程序」(non-compliance procedure)，成立推展委員會 (Implementation Committee)，藉以審查締約國未遵守約定之情形。截至 2009 年 11 月 25 日止，

共計有 191 個締約國批准此修正案。

- (三) 蒙特婁修正案：1997 年第 9 次締約國大會（MOP9）於加拿大蒙特婁舉行，通過各國應採用 ODS 的進出口許可制度（licensing system），決議對未批准哥本哈根修正案的締約國進行溴化甲烷貿易禁止。截至 2009 年 11 月 25 日止，計有 179 個締約國批准此修正案。
- (四) 北京修正案：1999 年 11 月於中國大陸北京召開之第十一次締約國會議通過北京宣言，同意納入管制 HCFCs 生產管制，並訂定期削減期程，此外，要求締約國提報使用於檢疫與裝運前處理的溴化甲烷用量。截至 2009 年 11 月 25 日止，計有 161 個締約國批准此修正案。

表 1、蒙特婁議定書及其修正案之批准情形

	批准之締約國總數
維也納公約	196
蒙特婁議定書	196
倫敦修正案	194
哥本哈根修正案	191
蒙特婁修正案	179
北京修正案	161

資料來源：http://ozone.unep.org/Ratification_status/

五、聯合國環境規劃署臭氧秘書處於 2009 年 11 月 3-8 日在埃及－加利卜港（Ghalib Port, Egypt）舉行蒙特婁議定書第 21 次締約國會議（MOP20），約計超過 900 人與會，包括各締約國政府機關代表、聯合國周邊組織、非政府組織（non-governmental Organisation, NGO）及相關產業團體共襄盛舉。



圖 1、MOP21 會議地點 Ghali Port International Convention Centre



圖 2、MOP21 大會會場

貳、 我國代表團

本次會議遵循往例以財團法人工業技術研究院名義，非政府組織(NGO)身分參加，由本署空保處簡副處長 慧貞率團，謝助理環境技術師 議輝；外交部條約法律司江組長 月琇；工業技術研究院王經理 壬、楊研究員 斐喬，共計 5 人與會，表 2。

表 2、成員任務分工表簡要說明如下

單位	職稱	姓名	任務分工
行政院環境保護署空氣品質保護及噪音管制處	副處長	簡慧貞	團長/對外交流
	助理環境技術師	謝議輝	資訊蒐集/會議紀錄
外交部條約法律司	組長	江月琇	法律及對外交流
工業技術研究院	主任	王壬	技術資訊/對外交流
能源與環境研究所	研究員	楊斐喬	技術資訊/資訊蒐集

參、 出國行程

2008 年 11 月 3 日	啓程
2008 年 11 月 4 日至 11 月 7 日	報到、出席會議/活動
2008 年 11 月 8 日	返程

肆、 與會目的

- 一、 本次會議針對計量吸入器 (Metered Dose Inhalers, MDI) 的氟氯化碳階段性生產、2010 和 2011 年必要用途豁免提名的提案、技術與經濟評估小組報告溴化甲烷使用於檢疫與裝運前 (Quarantine and Preshipment, QPS) 的相關議題、處理與遵約有關的庫存消耗臭氧物質的提案、地區性海龍供應失衡情形評估、高全球暖化潛勢物質替

代 (Ozone Depletion Substances, ODS) 議題討論。

- 二、 參與本次會議，有助於掌握趨勢及研擬我國因應策略，對於本署國際環保業務之推動，極有助益。

伍、 會議議程

本年度蒙特婁議定書締約國會議於埃及－加利卜港 (Ghalib Port, Egypt) 召開，2009 年 11 月 4-8 日為期 5 天的會議，分為 2009 年 11 月 4-6 日 3 天的預備會議及 11 月 7-8 日 2 天的高層會議。會議議程如下：

一、 預備會議 (2009 年 11 月 4 日－6 日)

(一) 預備會議開幕：

1. 埃及政府代表發言。
2. 聯合國環境規劃署代表發言。

(二) 組織事項：

1. 通過預備會議議程。
2. 工作安排。

(三) 審議 2010 年蒙特婁議定書各組織成員：

1. 履行委員會的成員。
2. 實施蒙特婁議定書多邊基金執行委員會的成員。
3. 不限成員工作委員會共同主席。

(四) 「維也納公約」及「蒙特婁議定書」信託基金財務報告和蒙特婁議定書的預算。

(五) 環境中臭氧層破壞物質庫存管理：

1. 技術與經濟評估工作小組的最後分析報告。
2. 進一步審議不限成員名額工作組在其第二十九屆會議上發起的工作情況。

(六) 高溫暖化潛勢的消耗臭氧物質替代品：

1. 「蒙特婁議定書」修正。

2. 進一步審議不限成員工作小組在第 29 屆會議發表之工作。

(七) 必要用途 (essential uses) 豁免議題：

1. 關於 2010 和 2011 年必要用途豁免提名的提案。
2. 氟氯碳化物生產定量噴霧吸入器 (metered dose inhalers) 階段性生產。
3. 審議對必要用途提名手冊的修正。

(八) 溴化甲烷有關的議題：

1. 技術和經濟評估小組的介紹。
2. 審議 2010 和 2011 年關鍵用途豁免提名。
3. 溴化甲烷檢疫和裝運前用途 (Quarantine and pre-shipment uses)。

(九) 技術和經濟評估小組報告的其他報告：

1. 「蒙特婁議定書」第 5 條國家採用氟氯烴從事冷凍空調產業之替代。
2. 海龍供應不平衡現象及改進此種不平衡現象的方式。
3. 學術研究用途豁免提案。
4. 加工劑用途提案。
5. 四氯化碳減排方案。
6. 技術和經濟評估小組報告其他問題。

(十) 「蒙特婁議定書」財務情形：

1. 評估財務機制範圍。
2. 關於多邊基金項下支應各方案情形。

(十一) 遵約及資料彙報議題：

1. 處置庫存的破壞臭氧層物質提案。
2. 審議委員會工作情形及建議事項。

(十二) 其它事項

二、高階會議 (2009 年 11 月 7 日和 8 日)

(一) 高級別會議部分開幕：

1. 締約方第二十次會議主席發言。

2. 埃及政府代表發言。
 3. 聯合國代表發言。
- (二) 組織事項
1. 選舉締約方第 21 次會議主席團成員。
 2. 通過締約方第 21 次會議的議程。
 3. 安排工作。
 4. 與會代表的全權證書。
- (三) 「維也納公約」及「蒙特婁議定書」和「蒙特婁議定書」修正案批准狀況。
- (四) 各評估小組介紹工作狀況及最近的進度。
- (五) 多邊基金執行委員會主席介紹執行委員會、多邊基金秘書處和基金實施機構的工作情況。
- (六) 各國代表團團長發言。
- (七) 預備會議聯席主席報告及審議建議締約方第 21 次會議通過之各項決議。
- (八) 締約方第二十二次會議的日期和地點。
- (九) 其它事項。
- (十) 通過締約方第二十一次會議的各項決定。
- (十一) 通過締約方第二十一次會議的報告。
- (十二) 會議閉幕。

陸、 會議過程

一、 會議開幕

- (一) 由巴基斯坦 Muhammad Maqsood Akhtar 及加拿大 Martin Sirois 共同主席正式宣佈蒙特婁議定書第 21 次締約國大會於 2009 年 11 月 4 日上午 10 時在埃及馬薩阿拉姆的加利卜港 (Port Ghalib, Marsa Alam, Egypt) 國際會議中心正式開幕。
- (二) 本次會議亦是無紙化會議，開會前已提醒與會者攜帶個人筆電，

另於會場中提供已儲存於隨身碟之會議資料及筆電供與會者使用，落實無紙化作業。

二、組織事務

(一) 埃及環境部部長 Maged George 致詞

Maged George 首先感謝各國參與第 21 次締約國大會，埃及為第 7 個簽署議定書的國家，並自 1990 至 1996 年落實了多個方案，近幾年因有多邊基金資助，改使用相關替代物質，並採取相關管制措施取代破壞臭氧層物質。然而，近幾年氣候異常變遷，造成海平面上升、雨量極端變化、引發乾旱或洪水等問題，已影響全球生態。呼籲各國及 UNEP 重視，並在今年 12 月哥本哈根會議上能夠與各國政府及環保團體攜手討論，建立完整解決方案。

(二) 臭氧秘書處執行秘書岡薩雷茲先生 Marco Gonzalez 致詞

感謝東帝文於 2008 年 9 月 16 日正式批准蒙特婁議定書後，蒙特婁議定書成為聯合國所有 196 個會員國正式批准的國際公約，然而，全球升溫的影響，也是重要的議題之一，為了保護地球環境，各國之間應永續長期合作，共同面對及解決臭氧層破壞及氣候變化所造成的影響。

(三) 共同人主持人安排議程

由共同人 Muhammad Maqsood Akhtar 及 Martin Sirois 主持預備會議，並宣佈將會議資料檔載於 UNEP/OzL.Pro.21/1 的議程中，締約國與各工作小組在全體會議上討論，共同主席將針對各議程討論工作擬定具體時間表，使會議順利進行。

三、審議 2010 年蒙特婁議定書各組織成員

(一) 執行委員會的成員

第 21 次締約國大會審議執行委員會的成員資格問題。依照締約國大會規定，執行委員會應由 10 個締約國各自選定的代表所組成，任期為兩年。即將卸任的締約國代表可以連任一屆。依據第 XII/13 號決議，第 21 次締約國大會主席和副主席，將從 2010 年的委員會成員中選出，以確保任期的連續性。

(二) 蒙特婁議定書多邊基金執行委員會的成員

第 21 次締約國大會將審議核定 2010 年執行委員成員，共計 14 人。其中 7 人應為第 5 條國家 (Article 5) 組成，另外 7 人應由非第 5 條國家組成 (non Article 5)。並遴選 2010 年多邊基金委員會之主席及副主席。

(三) 不限成員工作委員會共同主席

由第 21 次締約國大會遴選出 2010 年不限成員工作委員會主席。

四、「維也納公約」和「蒙特婁議定書」信託基金及財務預算報告

締約國設立預算委員會，分別審議 2009、2010 及 2011 年預算問題，並提出建議。擬定的預算將轉由高階會議通過。

五、討論蒙特婁議定書相關議題

(一) 環境中臭氧層破壞物質庫存管理

技術和經濟評估小組說明關於環境中臭氧層破壞物質庫存管理議

題報告，該報告載於臭氧秘書處網站¹。提供各締約國相關管理資訊。
這些報告包括：

1. 訂定臭氧層破壞物物質廢棄時程及可能流向。
2. 環境變遷（溫室效應、臭氧層破洞及氣候變化等）、社會及經濟因素所帶來的影響。
3. 庫存管理所需經費及問題。
4. 資金來源的問題。
5. 妥善處理的實施方式。

（二） 高溫暖化潛勢的破壞臭氧物質替代品

密克羅西尼亞（Micronesia）和模里西斯（Mauritius）兩國政府依據「維也納公約」第9條第2款擬定乙份「蒙特婁議定書」修正案，內容提議將HFC生產量及消費量納入蒙特婁議定書管制範。而2009年9月14日，加拿大、墨西哥和美國三個國家聯合提交此乙提案，要求各締約國討論其可行性後，轉由高階會議審議。密克羅西尼亞和模里西斯所提議的修正案及加拿大、墨西哥和美國提交的提案載於UNEP/OzL.Pro.21/3/Add.1 附件二。

（三） 必要用途（essential uses）豁免議題

評估小組指出在去年期間，氟氯碳化物（CFCs）計量吸入器與非氟氯碳化物計量吸入器之間價格差有縮小，且在推動實施第五條國家劑量吸入器逐步停止使用非氟氯碳化物的方式下，也有所進展。此

¹http://www.unep.ch/ozone/Assessment_Panels/TEAP/Reports/TEAP_Reports/teap-october-2009-decisionXX-7-task-force-phase2-report.pdf

外，歐盟（EU）在 2009 年底將停止氟氯碳化物在醫療用途上之生產，屆時可能影響庫存部分計量吸入器之供應。

（四） 溴化甲烷有關的議題

技術與評估小組說明溴化甲烷問題，包括溴化甲烷關鍵用途豁免提名與變更、檢疫及裝運處理（QPS）問題、提議 2010 年溴化甲烷技術委員會工作計畫，聯合國秘書處提前在 11 月 3 日召開一天的檢疫和裝運研討會，並依據討論結果及技術和經濟評估小組的報告採取進一步措施。締約國依豁免決定要求，提送高階會議審議及採納執行。

（五） 技術和經濟評估小組報告的其他報告

採用 HCFCs 冷凍空調產業之替代、海龍供應不平衡現象及改進此種不平衡現象的方式、學術研究用途豁免提案、加工劑用途提案、四氯化碳減排方案及其他問題，由技術與經濟評估小組討論，並提送高階會議決議，大會決議文，如附件三。

柒、 重要決議案

本次會議針對計量吸入器（Metered Dose Inhalers, MDI）的氟氯碳化物階段性生產、2010 和 2011 年必要用途豁免提名的提案、技術與經濟評估小組報告溴化甲烷使用於檢疫與裝運前（Quarantine and Preshipment, QPS）的相關議題、處理與遵約有關之庫存破壞臭氧物質的提案、地區性海龍供應失衡情形評估、高暖化潛勢物質替代（Ozone Depletion Substances, ODS）議題討論，經整理較具爭議性議題與我國較有關係之主要議案說明如下：

一、 破壞臭氧層物質（ODS）替代品之氟化烴（HFC）的管制：

- (一) HFC 為第三代冷媒(第一代 CFC，已全面禁用)，在氟氯烴(第二代 HCFC) 受到管制後，常以 HFC 作為替代品。然而，HFC 會造成溫室效應，為氣候變化綱要公約 (UNFCCC) 管制的六種溫室氣體之一。
- (二) 除了美國、加拿大、墨西哥、密克羅尼西亞 (Macronesia) 和模里西斯 (Mauritius)、挪威、日本、澳洲、紐西蘭、聖露西亞 (代表所羅門群島)、太平洋小島國聯盟等支持將 HFC 納入蒙特婁議定書管制外，所有開發中國家因正值 HCFC 管制初期，且對替代品技術尚未明朗，因此普遍表示反對。

二、溴化甲烷 (Methyl Bromide) 檢疫 (Q) 與裝運前 (QPS) 用途的停用規劃及替代技術。

- (一) 臭氧秘書處與 TEAP 於 MOP21 會議前舉辦一天的研討會，邀請歐盟、日本、加拿大、澳洲、美國、中國、埃及、莫里西斯、巴西針對各國管理與推動現況報告。
- (二) 歐盟於 2009 年 9 月 16 日公告修訂破壞臭氧層物質管理辦法 (EC No1005/2009)，要求自 2010.3.18 起禁止使用 MB 於 QPS，為目前全球第一個全面禁用溴化甲烷的地區。加拿大目前以數據申報與核配管理，澳洲目前則推動國際合作，推廣燻蒸證明制度。其他國家則著重於替代品技術研發。
- (三) 歐盟於今 (2009) 年於 MOP 會議提案，希望各締約方能儘速訂定溴化甲烷於 QPS 用途的削減時程，但也遭到各締約方的強烈反對。最後，以要求各締約方提交各國溴化甲烷使用於 QPS 用途之

資料，和要求 TEAP 定期提供經濟可行替代技術最新資訊。

(四) 為降低溴化甲烷於檢疫與裝運前 (Quarantine and Pre-shipment, QPS) 用途的使用量與相關排放，決議要求技術暨經濟評估小組要和國際植物保護公約的秘書處連繫合作，分析所有可取得相關溴化甲烷於 QPS 用途的使用量與排放量相關資訊，推估主要用途量的趨勢、替代技術、減量方案。

(五) 溴化甲烷技術評估委員會對於歐盟將禁止溴化甲烷在檢疫與裝運前處理 (QPS) 的使用，提供各項目的替代品詳細資料，如下：

1. 鮮果蔬菜：冷處理、高溫強力空氣、快速冷凍、磷化氫。
2. 木質包裝材：熱處理。
3. 已加工木材：熱處理、窯內烘乾、微波處理、輻射處理、硫醯氟混合物、碘化甲烷。
4. 建築類、設備類：Controlled Atmosphere 真空無氧處理(CO₂、N₂)、熱處理。

三、海龍的越境再利用

(一) 澳洲、加拿大、美國特別提出鼓勵各締約國消除回收海龍的進出口限制，以促進回收海龍在締約國之間自由流通，以滿足目前與今後之需求。

(二) 鼓勵各締約國考慮國內與全球之海龍長期需求，不要銷毀未受污

染的回收海龍，並採用最佳貯存方式以減少排放。鼓勵各締約國向臭氧秘書處報告目前和今後的需求，以供技術與經濟評估小組及海龍技術選擇委員會評估海龍庫之管理。

- (三) 各締約國應定期公告海龍關鍵用途使用名單，包括海洋工業、航空部門、軍事…等，因應海龍供應之減少及替代，採取必要措施。

四、CFC-MDI 必要用途豁免

- (一) 計有 11 個締約國，包括阿根廷、孟加拉、中國、埃及、印度、伊朗、伊拉克、巴基斯坦、俄羅斯、敘利亞及美國提交了豁免請求，要求豁免其在 2010 年以及某些情況下在 2011 年和 2012 年，氟氯碳化物用於計量吸入器的必要用途，而各締約國要求的數量，2010 年合計 3 263.48 公噸；2011 年合計 897.42 公噸。
- (二) 然而技術評估小組指出，很難對這些提名進行完整評估，主要是因為不清楚計量吸入器的供應量能否滿足患者需求，因此技術評估委員小組無法確定削減數量。然而，大部分提案獲得核准，但評估小組警告說，今年的提案獲准並不表示往後亦也可持續要求，因此，各國針對計量吸入器的市場，因審慎評估。

五、多邊基金的補助計畫。

- (一) 在「蒙特婁議定書」的規範內，多邊基金只提供第 5 條締約國資金，使開發中國家臭氧保護部門有利發展削減 ODS 的工作。
- (二) 在不限成員名額工作組第二十九次會議上，拉丁美洲等國家提出

一項草案，要求執行委員會針對多邊基金秘書處編寫的「2010 年年底以前體制加強：供資和水準」希望擴增第 5 條締約國財政支助經費，有助於各國替代技術的研發及 ODS 的削減。

六、大會決議通過蒙特婁議定書第 22 次締約國會議(MOP22)暫訂於 2010 年 10 月在烏干達首府坎帕拉(Kampala, Uganda)召開。

捌、公約發展趨勢分析

一、臭氧層破壞物質庫存管理：

技術與經濟評估委員會針對臭氧層破壞物庫存管理，提送最終報告，具體結論如下述：

- (一) 應妥善收集、回收及銷毀各種冷媒，已降低氣候變遷或臭氧層破洞所造成的環境問題。
- (二) 開發中國家在這 10-15 年期間，製造及使用的冷媒仍佔很大的比例，尤其在 HCFC-22 廢棄後，如未妥善處置，至 2030 年後將會造成大量排放於大氣中，造成氣候變遷。
- (三) 依據削減時程已開發國家 HCFCs 至 2020 年僅剩下 0.5 %消費量供國家使用。在替換掉 HCFCs 後，將產生大量廢棄 HCFCs 需要處置，此外，接續所使用的替代品 HFC 仍要建立完善的配套措施(由於溫暖化潛勢高)。
- (四) 經調查至 2018-2020 年期間，廢棄的 ODS 物質將達到最高峰，

每年約有 20~22.5 萬噸廢棄，其中 90%以上來自是冷媒。

- (五) 在未來 ODS 的銷毀技術將佔重要的一環，但是要如何妥善回收 ODS 至銷毀處理設施，將帶來重大的挑戰。
- (六) 至 2030 年後，除再精製或能再利用 ODS 可以再使用外，估算仍需要消毀的 ODS 量約在 40~50 萬噸之間。
- (七) 如果 HFC 的替代技術仍未有明確時程表，那提前替換掉 ODS 物質轉而使用 HFC 反而因其高溫暖化潛值，對氣候變遷有重大影響。
- (八) 在開發中國家中，至 2020 年以前，家用冰箱的廢棄將產生大量 ODS 物質，而以目前多邊基金尚不能補助各國所有回收和銷毀，但能減輕回收處置負擔。
- (九) 至 2030 年之前，泡棉之類的成品也是 ODS 較重要的來源之一，但由於該項物質存在於一般棉質類商品中，較難獲得妥善回收而銷毀，應盡可能將類似物質合併處置（如冰箱冷煤和發泡劑），較符合管制效益。
- (十) 海龍藥劑尚不能被納入 ODS 銷毀的項目中，因此，需更加重視長期庫存的管理，避免不必要的排放。

二、 高溫暖化潛勢的消耗臭氧物質替代品：

加拿大、墨西哥及美國所提交「蒙特婁議定書修正案」。該提案將 20 種 HFCs（高溫暖化潛勢物質）列入議定書附件 F 當中，如表 3。提

案中說明多種 HFCs 目前尚無替代品，因此，呼籲減少使用。針對已開發國家，應訂定削減時程，從 2013 年開始逐步停止生產量和消費量，往後再採進一步的削減措施，至 2033 年止達到基準量的 15%。針對開發中國家，則在 2016 年開始逐步停止生產量及消費量至 2043 年止達到基準量的 15%。而已開發及開發中國家的消費量計算，由 2004 年至 2006 年 HCFCs 及 HFCs 的年平均生產量推算。

如表3、20種HFCs之高溫暖化潛勢物質

物質	GWP	物質	GWP
HFC-32	675	HFC-227ea	3,220
HFC-41	92	HFC-236cb	1,340
HFC-125	3,500	HFC-236ea	1,370
HFC-134	1,100	HFC-236fa	9,810
HFC-134a	1,430	HFC-245ca	693
HFC-143	353	HFC-245fa	1,030
HFC-143a	4,470	HFC-365mfc	794
HFC-152	53	HFC-43-10mee	1,640
HFC-152a	124	HFC-1234yf	4
		(HFO-1234yf)	
HFC-161	12	HFC-1234ze	6
		(HFO-1234ze)	

最後，各國考量這是一項需受到重視的議題，決議請技術與經濟評估小組（TEAP）針對低全球暖化潛勢值（GWP 值）替代品進行研究，並維持提供相關資訊給 UNFCCC 的管道。

三、 必要用途（essential uses）豁免議題：

一些 ODS 的特定用途可以被豁免於削減時程外，但這些用途是個

案被提交至締約國會議，經審核通過才取得資格，例如氣喘用藥計量吸入劑 MDI、實驗分析試劑、檢疫裝運前處理用途 QPS 等。技術與經濟評估小組建議對必要用途提名的手冊進行一系列修正，以建立更詳實的資訊在必要用途豁免提名上。

四、 溴化甲烷有關的議題：

目前尚有許多替代溴化甲烷用於檢疫及裝運前處理上的技術仍有許多困難點，包括：需使用的溴化甲烷來運輸的貨品仍很多、各國使用的要求不同、貿易及管控的狀況不一致、檢疫和裝運前處理雙邊協議情形、替代技術尚需要有高水準的認可、替代物質缺少專利或其它商業的認可等，此外，各國訂定的管理辦法就是使用替代品的一大障礙，因為沒有任何措施來改變這些法令。

五、 科學評估委員會

在溫室效應方面，土壤與穀物燻蒸之溴化甲烷的替代品 Sulfuryl fluoride (SO_2F_2)會造成溫室效應，此外，農業與工業 N_2O 用量亦有增加的趨勢，造成全球暖化。經調查在 19 世紀末，大氣 CO_2 濃度為 270ppm，水的 pH 為 8.1，目前的大氣濃度為 380ppm，pH 值減少 0.1(變成 8)，估計到 2100 年，pH 值將減少 0.3 至 0.4。而 pH 值的減少，造成 UV 光更容易穿透照入海中，且影響軟體動物與浮游植物石灰化，而無法防護 UV。過去 50 年南極半島周邊的表面海水迅速升溫 $5-6^\circ\text{C}$ ，促使浮游植物增長，但也造成高 UV 危害浮游植物，影響固碳能力，各國應重視此現象。

六、 環境影響評估專家委員會

臭氧層的濃度已不再上升，但臭氧層的問題和氣候變遷的問題是互

相影響的，而非獨立的兩個問題。

臭氧層的保護效益和 UV 的量呈正向相關，估計 2060 年北半球中緯度地區的 UV 值將超過兩倍，UV 對人類的皮膚傷害很大，但傷害性也和維他命 D 是否足夠有關係。且 UV 和癌症（乳癌，結腸癌，前列腺癌）有關係，但維他命 D 對避免癌症有幫助。

玖、心得與建議

一、我國未來面臨的挑戰

(一) 高溫暖化潛勢物質與 HCFCs 物質的替代

臭氧層的回復與全球暖化在自然生態方面有相互影響的情形，替代技術的發展更有造成更大衝擊的情況產生，目前我國車輛及部分空調機使用之 HFC-134a 冷媒屬於高溫暖化潛勢 GWP 物質，對於環境及氣候變遷有一定影響，而 HFCs 是氣候變化綱要公約京都議定書管制物質之一，所以蒙特婁議定書締約國目前正積極尋找與聯合國氣候變化綱要公約的合作方式與溝通管道，並提至今（2009）年 12 月 UNFCCC 會議上討論，研擬 HCFC 可能的替代品。

(二) ODS 物質庫管理與銷毀

會議中各國針對 ODS 物質庫管理與銷毀進行討論，有關 ODS 銷毀方式及管理基金來源，技術與經濟評估小組也提到應妥善收集、回收及銷毀各種冷媒，減少臭氧層破洞所造成的環境問題。我國目前也有 ODS 銷毀的問題，如，非法走私 ODS 以及冷氣空調設備報廢後的冷媒銷毀，

過去可委託台塑公司協助銷毀 ODS，惟該公司自銷毀設備拆除後，國內現無銷毀設備，後續將擬訂定「蒙特婁議定書列管物質替代處理設施審查作業要點」，遴選國內合適之替代處理設施作為後續銷毀 ODS 廠商。

(三) 溴化甲烷使用於 QPS 問題

國際間已開始研發溴化甲烷替代品，歐盟甚至已公告將於明(2010)年 3 月 18 日起禁止溴化甲烷使用於 QPS 用途，也於今年的締約國大會中提案要求各國研擬溴化甲烷於 QPS 用途之停用時程。雖然，該提案最後並未通過，但也預告國際間已開始重視此議題。我國目前溴化甲烷僅用於 QPS 用途，農委會防檢局推動熱處理技術亦顯示我國遵約與善盡環保責任之努力。

二、本次代表團參與締約國大會，並未受到阻撓，另也接見相關重要與人員包括，埃及環保部部長 Eng. Maged George 及副部長 Dr. Mawaheb Abou、UNEP 臭氧秘書處副執行秘書 Mr. Paul Horwitz（前美國環保署代表團團長）、UNEP 臭氧秘書處法律事務組組長 Mr. Gilber Bankobez、歐盟代表顧問 Dr. Melanie Miller、巴勒斯坦代表 Mr. Jamil Mtoor、印度代表團團長 Dr. B. P. Nilaratna、斯里蘭卡代表、TEAP 主席 Mr. Stephen O. Andersen（美國環保署 Climate Protection Partnerships Division 組長）等，正面傳達我國（Taiwan）遵循已開發國家管制規範，和保護臭氧層的努力成果，也獲得各方肯定，相關會談如下述：

(一) 埃及環保部部長（Eng. Maged George）及副部長（Dr. Mawaheb Abou）：

11 月 6 日會晤埃及環境部長 Mr. Eng. Maged George Elias Ghattas，如圖 3，部長對於本年度於埃及舉辦蒙特婁議定書會議十分重視，與會團員與部長會談順利，並轉達沈署長問候之意，表示我環保署將於明年 7 月舉辦永續發展之國際研討會，誠摯邀請埃及環保部長訪台出席該會議，部長並抱持高度興趣，希望本署日期確定後進一步逕洽。

(二) 聯合國環境規劃署 (UNEP) 臭氧層秘書處副執行秘書 Mr. Paul S. Horwitz，如圖 4：

感謝 UNEP 臭氧層秘書處，對於台灣參與蒙特婁議定書締約國大會及持續提供相關國際公約最新資訊予我國有莫大幫助，且說明我國處身雖非為締約國成員，但仍遵守非第五條國家管制時程，竭盡所能為世界地球村盡一份心力，並轉交我國 What Taiwan is Doing 及 Methyl Bromide Management in Taiwan 文宣品，充分瞭解台灣之處境並感謝台灣之配合與努力，對台灣之作為甚表肯定。

(三) 歐盟代表團 Dr. Melanie Miller，如圖 5：

首先感謝歐盟於去年技術小組大會中，讚揚我國在推動溴化甲烷減量的成果，並再次強調我國遵循已開發國家管制規範的決心與努力。對於我國在保護臭氧層的努力成果，Dr. Miller 也建議我方透過舉辦國際研討會的方式，與各國多方交流。由於歐盟已公告於明(2010)年 3 月停止 QPS 用途使用溴化甲烷，對於我方希望能與歐盟交流規劃減量時程與推動替代品的資訊，Dr. Miller 非常熱心願與我方代表保持密切聯繫，交流相關訊息。



圖 3、埃及環保部部長 Eng. Maged George 會談情形



圖 4、聯合國環境規劃署（UNEP）臭氧層秘書處副執行秘書 Mr. Paul S. Horwitz



圖 5、歐盟代表團 Dr. Melanie Miller

(四) 巴勒斯坦環保品質署副署長 Mr. Jamil Mtoor

說明我國遵循已開發國家管制規範的決心與努力，雙方並願意與各國合作，共同為保護臭氧層而努力。此外，透過談話中請教巴勒斯坦以實體身分參與聯合國相關組織及參與經驗提供我國參考，並認同我國不應被排除在聯合國相關大會之外，且支持台灣以適當身分參與，並答應適時協助我國代表團，以台灣名義參與年底哥本哈根 UNFCCC 會議。

(五) UNEP 臭氧秘書處法律事務組組長 Mr. Gilber Bankobeza

說明我國遵守蒙特婁議定書之規定，採非第五條國家之標準管制國

內業者共同努力保護臭氧層，並每年於 9 月底前向聯合國環境規劃署臭氧秘書處申報前一年度列管化學物質生產、輸入及輸出等消費量資料。然而我國雖非聯合國成員，並受到中國政治阻撓等因素，無法以政府組織身分簽署蒙特婁議定書，但自始完全遵守公約各項管制措施，並以非政府組織參與歷屆締約國大會，對我國努力表示肯定與讚賞。

三、接受 UNEP 現場訪問

於會場週邊我國團長樂意接受 UNEP 現場訪問，充分表達台灣在蒙特婁議定書列管物質管制上的努力，此外，受訪實錄已被 UNEP 上傳至 UNEP OzonAction is on Facebook 並連結至 YouTube 網站，網站上也呈現 Taiwan 及空保處之註記，雖然是臨時訪問，但傳達台灣的努力並受 UNEP 肯定，放於網站上，為 UNEP 對台灣釋出善意的一個突破，如圖 6。



Huichen Chien, DDG Department Air Quality Protection & Noise Control, Taiwan

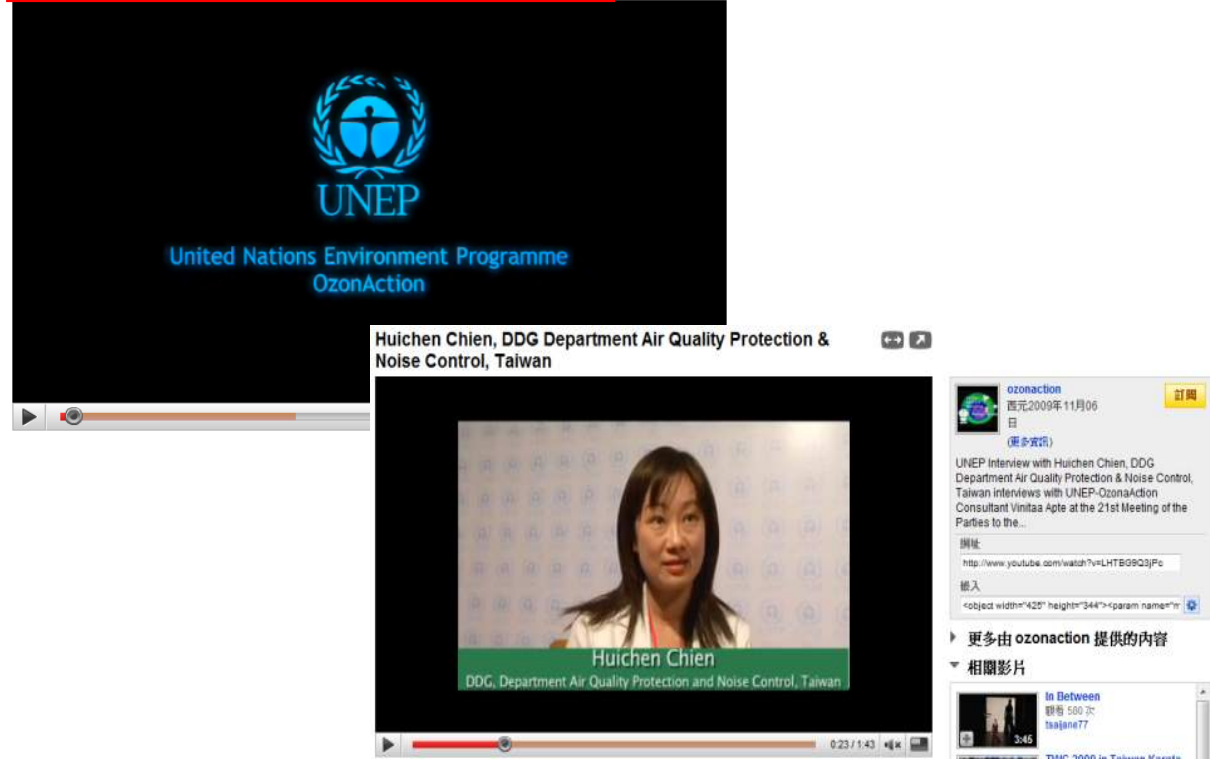


圖 6、團長接受 UNEP 公關新聞處採訪

壹拾、附件

一、蒙特婁議定書第21次締約國大會報告（簡報）

二、蒙特婁議定書第21次締約國大會會議議程

Provisional agenda of the Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that Deplete the Ozone Layer

三、蒙特婁議定書第21次締約國大會報告書全文

Report of the Twenty-First Meeting of the Parties to the Montreal Protocol
on Substances that Deplete the Ozone Layer

四、Earth Negotiations Bulletin : A Reporting Service for Environment and
Development Negotiations, Published by the International Institute for
Sustainable Development (IISD)

五、蒙特婁議定書締約國名單



行政院環境保護署
Environmental Protection Administration
Executive Yuan, R.O.C. (Taiwan)

參加蒙特婁議定書 第21次締約國大會報告



空氣品質保護及噪音管制處

行政院環境保護署

大綱

- 臭氧層保護背景說明
- 我國之參與情形
- 本次會議(MOP 21)
- 議程與重點



行政院環境保護署
Environmental Protection Administration
Executive Yuan, R.O.C. (Taiwan)

全球臭氧層保護行動

- 國際公約
 - 維也納公約(1985)、蒙特婁議定書(1987)
 - 倫敦、哥本哈根、蒙特婁、北京等四項修正案
- 目標
 - 保護人類健康與環境，免於遭受臭氧層變化所引起之不利影響
- 公約秘書處
 - 聯合國環境規劃署臭氧秘書處
United Nations Environment Programme, Ozone Secretariat
- 專家小組：TEAP 技術與經濟評估小組
 - Technology and Economic Assessment Panel

- 國際臭氧日
 - 每年9月16日



蒙特婁議定書及其修正案之批准情形

- ✚ 2009年9月16日：「蒙特婁議定書」成為全球第一個由聯合國會員國、觀察國(教廷 Holy See)、觀察組織(歐盟EC)等共計196個國家組織皆已承諾遵循之國際環保公約

	維也納公約	蒙特婁議定書	倫敦修正案	哥本哈根修正案	蒙特婁修正案	北京修正案
通過年	1985	1987	1990	1992	1997	1999
國家數目	196	196	194	191	179	161

資訊來源：2009年11月25日, http://ozone.unep.org/Ratification_status/

註：

- [1] 修正案：以增加新的管制方案與物質為主，需要一定數目的締約國批准才具有效力。
例如，北京修正案中增加一氟一溴甲烷為蒙特婁議定書管制物質
- [2] 調整案：無管制項目之新增，以加嚴現有管制方案為主。僅需締約國大會決議即可生效，無需締約國批准程序。
例如，MOP-19決議A2國家之氟氯烴2010年消費量削減由65%提高到75%。



蒙特婁議定書管制時程

已開發國家 非第五條國家

- ◆ 海龍停止生產及進口
- ◆ 溴化甲烷限量生產及進口
- ◆ CFCs、1,1,1-三氯乙烷、CCl₄、HBFCs停止生產及進口

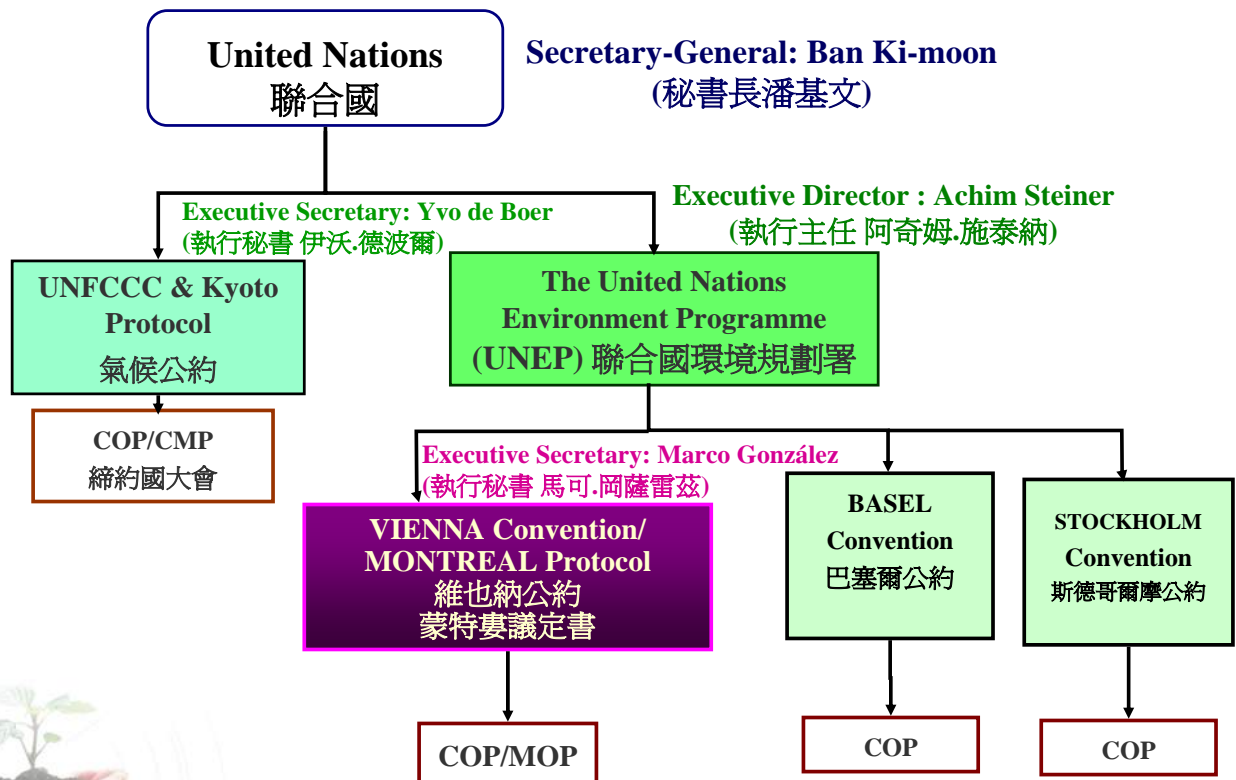
- ◆ HCFCs限量消費及進口
- ◆ HCFCs生產量、消費量加速削減
→ 2010年削減75% → 2015年削減90%
→ 2020年99.5% → 2030年100%

開發中國家 第五條國家

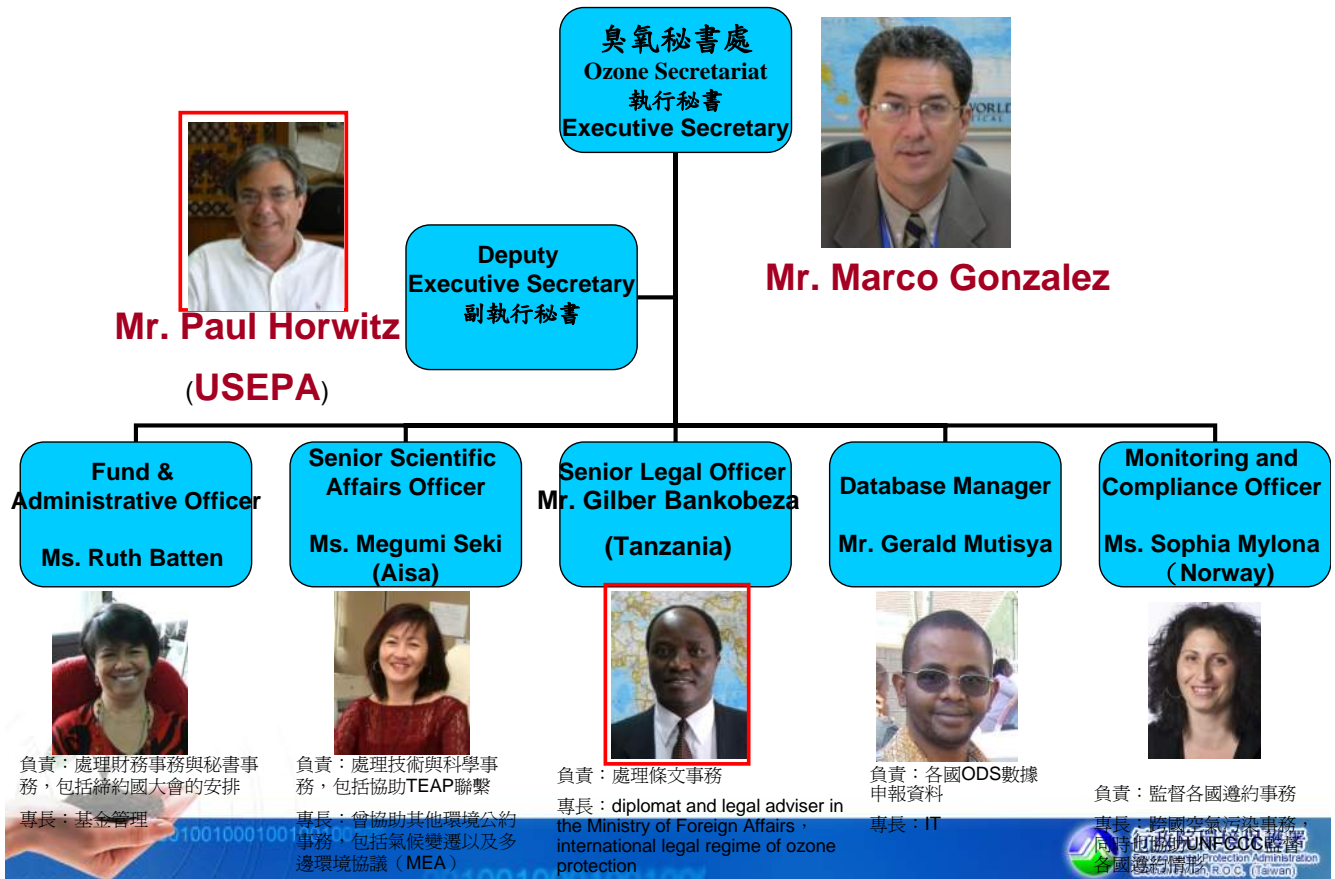
- 1994.1
- 1995.1
- 1996.1 ◆ HBFCs停止生產及進口
- 1999-2002 ◆ CFCs、海龍凍結生產及進口
- 2004.1
CFCs: 2005年50% → 2010年100%
HCFCs: 2013年凍結 → 2040年削減100%



國際環保公約之組織介紹



臭氧秘書處之組織介紹



埃及環境部簡歷說明



- 埃及環境部，環境部部長
Mr. Eng. Maged George
- 2004年7月開始擔任埃及環境部長。
- 過去擔任過埃及國軍的工程部部長，專長為機械動力工程



- 埃及環境部，環境部副部長
Dr. Mawaheb Abou
- 2007年3月開始擔任埃及環境部副部長，過去擔任過環境品質處處長
- 目前也兼任國家永續發展之技術秘書處處長

我國代表團成員

- 一、本(98)年11月3~8日締約國會議假埃及馬薩阿拉姆市加利卜港召開；約計超過900人與會。
- 二、我方代表團成員（共計5人）本(98)年11月3~6日締約國會議假埃及馬薩阿拉姆市加利卜港召開，約計超過900人與會：
 - (一)本署空保處：簡副處長慧貞、謝助環師議輝
 - (二)外交部條約法律司：江組長月琇
 - (三)工研院能環所：王壬經理、楊研究員斐喬



MOP 21 會議議程

- ✦ 相關會議自11/3開始，包括MB研討會、預備會議及高階會議，11/8結束
- ✦ 大會並未安排周邊會議

日期	3日 (二)	4日 (三)	5日 (四)	6日 (五)	7日 (六)	8日 (日)
會議內容	溴化甲烷用於檢疫與裝運前研討會	預備會議 1.預備會議開幕 2.組織事項 3.審查2010年蒙特婁議定書機構成員 4.信託基金財務報告和的蒙特婁議定書預算	預備會議 5.ODS 物質庫管理與銷毀相關議題 6.高全球暖化潛勢物質替代ODS的議題 7.必要用途豁免的議題 8.溴化甲烷相關議題	預備會議 9.技術與經濟評估小組報告相關議題 10.蒙特婁議定書財務機制 11.遵約與數據匯報議題 12.其他事項	高階會議 1.高階會議開幕 2.組織事項 3.維也納公約、蒙特婁議定書修正案之批准狀況 4.各評估小組介紹工作狀況 5.多邊基金執行委員會主席報告執行委員會、多邊基金秘書處和基金實行機構的工作情況 6.各國代表發言	高階會議 7.預備會議主席報告及各項決議文的通過情形 8.蒙特婁議定書第二十二次締約國會議日期與時間 9.其他事項 10.第二十一次締約國會議通過之決議文 11.第二十一次締約國會議通過之報告 12.會議閉幕

技術專家
討論會議

依議題逐一討論，必要時並成立磋商小組（Contact group）研擬決議文

召開高階環境部長會議
通過後續推動事項決議文



MOP 21 關鍵議題

與我國政策研擬最有相關的議題

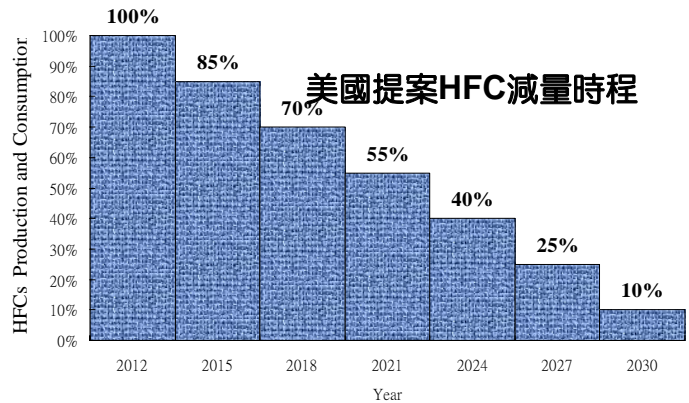
- HFC納入蒙特婁議定書的管制物質之一
- ODS（破壞臭氧層物質）流通庫的環境友善策略
- 溴化甲烷QPS用途之官方要求的可行執行方式

此為美國的提案

尚屬要求
TEAP進
行的研究
階段

大會討論的其他議題

- 溴化甲烷必要用途豁免
essential use
- 氣喘用藥CFC-MDI關鍵用途豁免
critical use
- 財務基金分配
- 各委員會委員



落實無紙化與會代表使用埃及政府 提供大會討論之隨身碟資料



- METI Ministry of Economy, Trade and Industry
- MOP21_METI_JAPAN_DATA LIST
 - Supercritical CO2 assisted Water Blown Spray Foams
 - Enhanced Containment and Recovery
 - Protect the ozone layer Prevent global warming
 - Outline of RRC Activity
 - An Invitation to SANYO Electric Group
 - SANYO CO2 Products
- MOP 21 Documents
 - 供締約國第21次大會討論議題及注意資料
 - 決議草案及《蒙特婁議定書》的擬議修正
 - 遵約及資料彙報議題
 - 臭氧秘書處《蒙特婁議定書》資料報告
 - 其他國家不遵約問題
 - 多邊基金執行委員會討論事項
 - 多邊基金秘書處及基金實施機構工作
 - 技術和經濟評估小組最終報告

落實無紙化與會代表使用埃及政府 提供大會討論之隨身碟資料(續)



蒙特婁議定書

21st Meeting of the Parties to the Montreal Protocol

出國人員手冊



2009年11月3日至11月8日

會議議程

11月3日 溴化甲烷使用於檢疫與裝運
前研討會

11月4~6日 預備會議

1. 預備會議開幕
2. 組織事項
3. 審查2010年蒙特婁議定書個機構成員
4. 信託基金財務報告和的蒙特婁議定書預算
* 舉辦國舉辦晚宴
5. ODS物質庫管理與銷毀相關議題
6. 高全球暖化潛勢物質替代ODS的議題
7. 必要用途豁免的議題
8. 溴化甲烷相關議題
9. 技術與經濟評估小組報告相關議題
10. 蒙特婁議定書財務機制
11. 遵約與數據匯報議題
12. 其他事項

11月7~8日 高階會議

1. 高階會議開幕
2. 組織事項
3. 維也納公約、蒙特婁議定書修正案之批准狀況
4. 各評估小組介紹工作狀況
5. 多邊基金執行委員會主席報告執行委員會、多邊基金秘書處和基金實行機構的工作情況



行政院環境保護署
Environmental Protection Administration
Executive Yuan R.O.C. (Taiwan)

會議討論重點及決議內容



(一) 破壞臭氧層物質 (ODS) 替代品之氟化烴 (HFC) 的管制

1. HFC為第三代冷媒(第一代CFC，已全面禁用)，在氟氯烴(第二代HCFC)受到管制後，常以HFC作為替代品。然而，HFC會造成溫室效應，為氣候變化綱要公約 (UNFCCC) 管制的六種溫室氣體之一。
2. 會議中美國、加拿大、墨西哥、密克羅尼西亞 (Macronesia) 和模里西斯 (Mauritius)、挪威、日本、澳洲、紐西蘭、聖露西亞 (代表所羅門群島)、太平洋小島國聯盟等國家支持將HFC納入蒙特婁議定書管制外，所有開發中國家因正值HCFC管制初期，且對替代品技術尚未明朗，因此表示反對。
3. 最後，決議請技術與經濟評估小組 (TEAP) 針對低全球暖化潛勢值 (GWP值) 替代品進行研究，並維持提供相關資訊給 UNFCCC的管道。



行政院環境保護署
Environmental Protection Administration
Executive Yuan R.O.C. (Taiwan)

會議討論重點及決議內容(續)

(二) 溴化甲烷 (Methyl Bromide) 檢疫 (Q) 與裝運前 (QPS) 用途的停用規劃：

1. 臭氧秘書處與TEAP特別於MOP21會議前舉辦一天的研討會，邀請歐盟、日本、加拿大、澳洲、美國、中國、埃及、莫里西斯、巴西針對各國管理與推動現況報告。
2. 於2009年9月16日公告修訂的破壞臭氧層物質管理辦法 (EC No1005/2009)，要求自2010.3.18起禁止使用MB於QPS。
3. 加拿大目前以數據申報與核配管理。
4. 澳洲目前則推動國際合作，推廣燻蒸證明制度。
5. 其他國家則著重於替代品技術研發。



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會議討論重點及決議內容(續)

(三) 海龍的越境再利用

澳洲、加拿大、美國特別提出鼓勵各締約國消除回收海龍的進出口限制，以促進回收海龍在締約國之間自由流通，以滿足目前與今後之需求。鼓勵各締約國向臭氧秘書處報告目前和今後的需求，以供技術與經濟評估小組及海龍技術選擇委員會評估海龍庫之管理。



行政院環境保護署
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公約發展趨勢分析

(一)蒙特婁議定書成功因素：

- 1.具體科學證據，引導政策走向
- 2.ODS管制對象及削減目標時程明確
- 3.創造產業新商機、NGO參與監督
- 4.多邊基金資助，強化能力建構

(二)臭氧層的回復與全球暖化在自然生態方面有相互影響的情形，替代技術的發展更有造成更大衝擊的情況產生。因此，未來蒙特婁議定書與氣候變化綱要公約應該維持溝通的管道，彼此交流相關資訊。

(三)蒙特婁議定書第22次締約國會議(MOP22)暫訂於2010年10月在烏干達首府坎帕拉(Kampala, Uganda)召開。



行政院環境保護署
Environmental Protection Administration
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我國因應策略

- 依據本次MOP21會議討論的重點，顯示各締約方關注的重點包括溴化甲烷QPS用途的減量規劃、關注推動低GWP值替代品技術的重要性、廢棄ODS的環境友善管理制度、過多海龍的越境再利用等，也是我國未來可能發生的問題，因此需著手蒐集相關國外技術，以及可應用於國內之可行性評估。



行政院環境保護署
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與會相關照片



- 開羅機場接待人員，引導各國貴賓轉機至馬薩阿拉姆機場開會現場。
- 開會現場門口各國國旗



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與會相關照片(續)



- 報到處，核對身份基本資料換取會場識別證。



- 我國代表團報到(由左至右分別為接待人員、本署簡副處長慧貞、外交部條法司江組長月琇、工研院王壬、楊斐喬研究員)。



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與會相關照片(續)



- 會議入口處需通過安檢，才能進入。



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與會相關照片(續)



- 參觀會場周邊攤位及宣導看板。
- 展場中，攤位簡介人員說明此束花未使用溴化甲烷而栽種出來的。



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與會相關照片(續)



- 冷媒回收機簡介
- 介紹冷媒回收機之廠商



與會相關照片(續)



- 大會現場主席台



- 團長於會場留影

與會相關照片(續)



- 開會現場情形
- 我國代表團座位



與會相關照片(續)

- 簡副處長慧貞接受UNEP公關新聞處採訪。



與會相關照片(續)

Huichen Chien, DDG Department Air Quality Protection & Noise Control, Taiwan



Huichen Chien, DDG Department Air Quality Protection & Noise Control, Taiwan



ozonation
西元2009年11月06日
(更多資訊)
UNEP Interview with Huichen Chien, DDG Department Air Quality Protection & Noise Control, Taiwan interviews with UNEP-OzonaAction Consultant Vinitaa Apte at the 21st Meeting of the Parties to the...
網址
<http://www.youtube.com/watch?v=LHTB09Q3JFc>
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<object width="420" height="344">+param name="r">
更多由 ozonation 提供的內容
相關影片
In Between
觀看 500 次
tsajane77
3:45

與會相關照片(續)



- 與技術評估委員會小組工作人員Mela Nie Milier訪談。



與會相關照片(續)



- 與UNEP臭氧秘書處法律事務組組長Mr. Gilber Bankobeza討論我國參與人員名單資料是否可將China移除，以及如何可以參與成為蒙特婁議定書觀察員。



- 臭氧秘書處副執行秘書Mr. Paul Horwitz（前美國環保署代表團團長）傳達我國（Taiwan）保護臭氧層的努力成果。

與會相關照片(續)



- 埃及環境部長Mr. Eng. Maged George Elias Ghattas仍樂意抽空與我方代表團見面，除表達我國（Taiwan）在保護臭氧層方面的努力成果，也轉達署長邀請埃及環境部長於明年來台參加永續發展會議。



與會相關照片(續)



- MOP20屆的主席Robert Toth (Hungary)發言，說明蒙特婁議定書為聯合國196國家皆批准的締約。



- 埃及環境部部長Maged George期望在下個月哥本哈根會議上能夠充分討論，建立一個完整解決方案基礎，降低破壞環境物質。



與會相關照片(續)



- 各國團長與秘書處執行秘書留影。



- 我國代表團工業技術研究院，王主任壬及楊研究員斐喬





Every Bit of Our Effort Can Make Taiwan Better



附錄一：維也納公約與蒙特婁議定書之觀察員規範分析

蒙特婁議定書及其修正案之批准情形

- 2009年9月16日：「蒙特婁議定書」成為全球第一個由聯合國會員國、觀察國(教廷 Holy See)、觀察組織(歐盟EC)等共計196個國家組織皆已承諾遵循之國際環保公約

	維也納公約	蒙特婁議定書	倫敦修正案	哥本哈根修正案	蒙特婁修正案	北京修正案
通過年	1985	1987	1990	1992	1997	1999
國家數目	196	196	194	191	179	161

資訊來源：2009年11月25日, http://ozone.unep.org/Ratification_status/

註：

- [1] 修正案：以增加新的管制方案與物質為主，需要一定數目的締約國批准才具有效力。
例如，北京修正案中增加一氯一溴甲烷為蒙特婁議定書管制物質
- [2] 調整案：無管制項目之新增，以加嚴現有管制方案為主。僅需締約國大會決議即可生效，無需締約國批准程序。
例如，MOP-19決議A2國家之氟氯烴2010年消費量削減由65%提高到75%。



維也納公約及蒙特婁議定書之觀察員資格

- 從申請以觀察員國家資格參與大會 (Conference of the Parties/Meetings of the Parties) 的條文來看，申請成為觀察國之前提仍必須為聯合國會員國(State)
- 從Rules of procedure內容來看，須先經大會同意成為觀察員國家後，接到秘書處通知參加大會者才能以該身分與會，但無投票權。
- 聯合國兩個常任觀察員
 - 國家：教廷(Holy See)已是蒙特婁議定書的締約方
 - 實體：巴勒斯坦解放組織(Palestine)仍僅是蒙特婁議定書的Observer State



維也納公約及蒙特婁議定書之觀察員資格

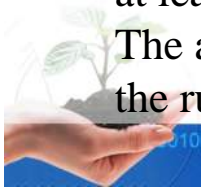
Article 6 of Vienna Convention (Conference of the Parties, COP)

Article 11 of Montreal Protocol (Meetings of the Parties, MOP)

- The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not party to this Convention, may be represented at meetings of the Conference of the Parties by observers.

Any body or agency, whether national or international, governmental or non-governmental, qualified in fields relating to the protection of the ozone layer which has informed the secretariat of its wish to be represented at a meeting of the Conference of the Parties as an observer may be admitted unless at least one-third of the Parties present object.

The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.



維也納公約及蒙特婁議定書之觀察員資格

Rules of procedure for meetings of the Conference of the Parties to the Vienna Convention and Meetings of the Parties to the Montreal Protocol

Observers

Rule 6

- The Secretariat shall notify the United Nations and its specialized agencies, the International Atomic Energy Agency and **any State not party to the Protocol [Convention] of any meeting so that they may be represented by observers.** Such observers may, upon invitation of the President, and if there is no objection from the Parties present, participate without the right to vote in the proceedings of any meeting.

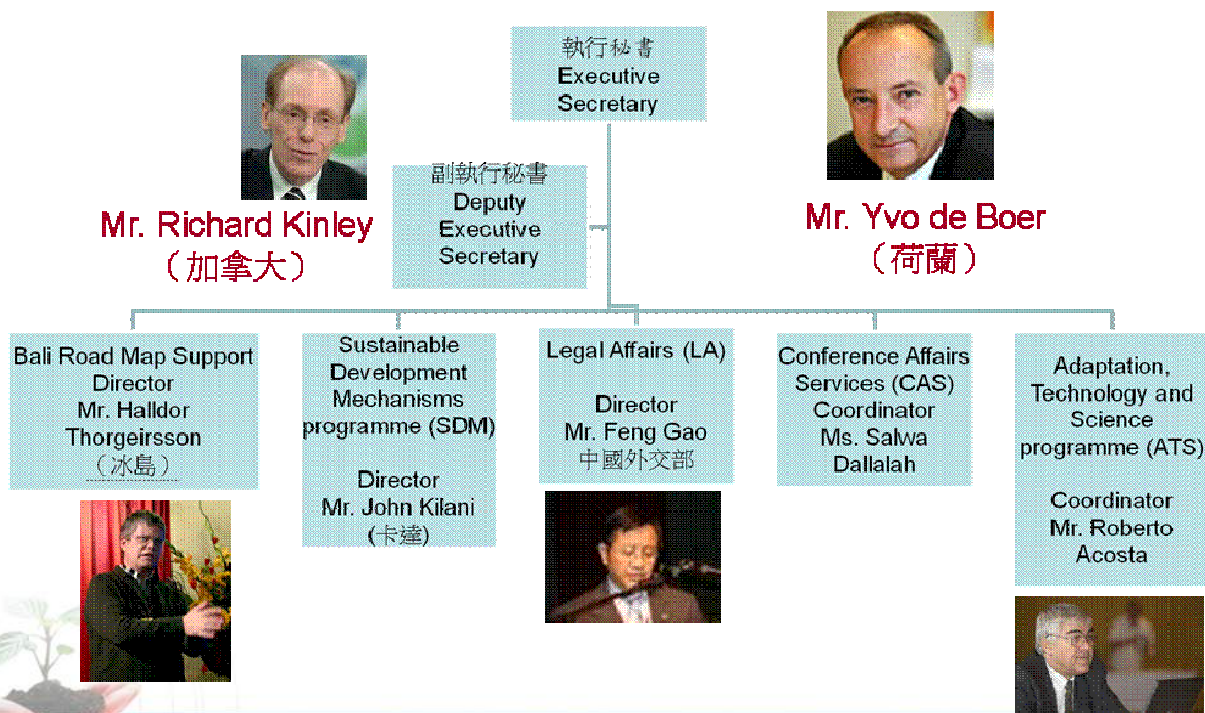
Rule 7

- The Secretariat shall notify any body or agency, whether national or international, governmental or non-governmental, qualified in fields relating to the protection of the ozone layer which has informed the Secretariat of its wish to be represented, of any meeting so that they may be represented by observers, subject to the condition that their admission to the meeting is not objected to by at least one third of the Parties present at the meeting. Such observers may, upon invitation of the President, and if there is no objection from the Parties present, participate without the right to vote in the proceedings of any meeting in matters of direct concern to the body or agency they represent.



附錄二：UNFCCC組織圖及條文解釋說明

氣候變遷秘書處 (Climate Change Secretariat) 之組織介紹



氣候變化綱要公約與京都議定書之觀察員資格

Article 7 , paragraph 6 of UNFCCC

- The United Nations, its specialized agencies and the International Atomic Energy Agency, **as well as any State member thereof or observers thereto not Party to the Convention, may be represented at sessions of the Conference of the Parties as observers.** Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by the Convention, and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties as an observer, may be so admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.



氣候變化綱要公約與京都議定書之觀察員資格

Article 13 , paragraph 8 of UNFCCC

- **8. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State member thereof or observers thereto not party to the Convention, may be represented at sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol as observers.** Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by this Protocol and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties serving as the meeting of the Parties to this Protocol as an observer, may be so admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure, as referred to in paragraph 5 above.
- **5. The rules of procedure of the Conference of the Parties and financial procedures applied under the Convention shall be applied *mutatis mutandis* under this Protocol, except as may be otherwise decided by consensus by the Conference of the Parties serving as the meeting of the Parties to this Protocol.**





**United Nations
Environment
Programme**

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**Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that
Deplete the Ozone Layer**
Port Ghalib, Egypt, 4–8 November 2009

**Annotated provisional agenda of the Twenty-First Meeting of the
Parties to the Montreal Protocol**

A. Preparatory segment (4–6 November 2009)

1. Opening of the preparatory segment

1. The preparatory segment of the Twenty-First Meeting of the Parties to the Montreal Protocol will be opened by the co-chairs of the Open-ended Working Group on 4 November 2009 at 10 a.m. in the International Convention Centre in Port Ghalib, Marsa Alam, Egypt. Registration of participants will begin at 8 a.m. on 3 November 2009 at the meeting venue. Participants are encouraged to register well in advance of the meeting through the Secretariat's website (<http://ozone.unep.org>), and are urged to bring their laptops to the meeting, as it will once again be virtually paperless. Statements will be made by representatives of the Government of Egypt and the United Nations Environment Programme.

2. Organizational matters

(a) Adoption of the agenda of the preparatory segment

2. The provisional agenda set forth in document UNEP/OzL.Pro.21/1 will be before the Parties for adoption.

(b) Organization of work

3. Mr. Muhammad Maqsood Akhtar (Pakistan) and Mr. Martin Sirois (Canada) will co-chair the preparatory segment. The Parties may wish to conduct their work in plenary meeting and contact groups as appropriate. The co-chairs are expected to draw up a specific timetable to cover the work on the agenda.

3. Consideration of membership of Montreal Protocol bodies for 2010

(a) Members of the Implementation Committee

4. The Twenty-First Meeting of the Parties will consider the issue of membership of the Implementation Committee. In accordance with the non-compliance procedure adopted by the Parties, the Committee is to comprise representatives of 10 Parties who are elected for two years on the basis of equitable geographical distribution. Representatives of outgoing Parties may be re-elected for a second consecutive term. In accordance with decision XII/13, the Committee members that are selected to serve in 2010 are requested to elect its President and Vice-President during the Twenty-First Meeting of the

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Parties to ensure the continuity of these two offices. A draft decision to facilitate consideration of this item can be found as draft decision XXI/[BB] in chapter III of document UNEP/OzL.Pro.21/3.

(b) **Members of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol**

5. The Twenty-First Meeting of the Parties is expected to consider and endorse the selection of the 14 members of the Executive Committee for 2010. Seven members will be proposed from those Parties operating under paragraph 1 of Article 5 and seven will be proposed from those Parties not so operating. In addition, the Parties will be requested to endorse the selection of the Chair and Vice-Chair of the Committee for 2010. A draft decision to facilitate consideration of this item can be found as draft decision XXI/[CC] in chapter III of document UNEP/OzL.Pro.21/3.

(c) **Co-Chairs of the Open-ended Working Group**

6. The Twenty-First Meeting of the Parties will be expected to take a decision on the chairmanship of the Open-ended Working Group for 2010. A draft decision designed to facilitate consideration of this item can be found as draft decision XXI/[DD] in chapter III of document UNEP/OzL.Pro.21/3.

4. **Financial reports and budgets of the trust funds for the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and budgets of the Montreal Protocol**

7. The Parties are expected to establish a budget committee to deliberate on and recommend, among other things, a revised budget for 2009, a budget for 2010 and an indicative budget for 2011. The proposed budget would then be forwarded, as appropriate, to the high-level segment for adoption.

5. **Environmentally sound management of banks of ozone-depleting substances (decision XX/7)**

(a) **Presentation of the final analysis of the task force of the Technology and Economic Assessment Panel**

8. The Parties are expected to consider the final analysis of the Technology and Economic Assessment Panel's task force on the management and destruction of banks of ozone-depleting substances.

(b) **Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting**

9. In accordance with decision XX/7, the Secretariat convened a one-day workshop on the management and destruction of banks of ozone-depleting substances prior to the twenty-ninth meeting of the Open-ended Working Group. That workshop, and the Technology and Economic Assessment Panel's preliminary report, contributed to a robust discussion of banks during the Working Group meeting. The Parties are expected to continue their deliberations on the draft list of ideas included in annex I to document UNEP/OzL.Pro.21/2, and determine what action, if any, they deem appropriate.

6. **High-global-warming-potential alternatives to ozone-depleting substances (decision XX/8)**

(a) **Proposed amendment to the Montreal Protocol**

10. In accordance with paragraph 2 of Article 9 of the Vienna Convention, the Governments of the Federated States of Micronesia and Mauritius proposed an amendment to the Montreal Protocol to bring within its control the production and consumption of hydrofluorocarbons. On 14 September 2009, the Governments of Canada, Mexico and the United States of America submitted a related proposal. The Parties are expected to consider and forward to the high-level segment any action that they deem appropriate. The proposed amendment by the Federated States of Micronesia and Mauritius can be found in chapter II of document UNEP/OzL.Pro.21/3, while the proposal by Canada, Mexico and the United States can be found in the addendum to that document. The list of concepts relevant to the proposed amendment is set out in annex II to document UNEP/OzL.Pro.21/2.

(b) **Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting**

11. In accordance with decision XX/8, the Secretariat held a one-day open-ended dialogue on substitutes for ozone-depleting substances with a high-global-warming potential prior to the twenty-ninth meeting of the Open-ended Working Group. The results of that dialogue, together with consideration of the proposed amendment to the Montreal Protocol noted above, led to the discussion of two specific proposals that, as agreed by the Working Group, were to be forwarded to the Twenty-First Meeting of the Parties for further consideration. Those proposals can be found as draft decision XXI/[I]

and XXI/[J] in chapter I of document UNEP/OzL.Pro.21/3. The Parties may wish to continue their work on these proposals with a view to forwarding final recommendations, as appropriate, to the high-level segment.

7. Issues related to essential-use exemptions

(a) Proposal on nominations for essential-use exemptions for 2010 and 2011

12. The Parties are expected to discuss and recommend a decision on Parties' nominations for essential-use exemptions. A draft decision on this issue was discussed during the twenty-ninth meeting of the Open-ended Working Group, and it was agreed that the draft decision prepared by the relevant contact group's co-chairs should be forwarded to the Twenty-First Meeting of the Parties for further consideration. It can be found as draft decision XXI/[H] in chapter I of document UNEP/OzL.Pro.21/3.

(b) Campaign production of chlorofluorocarbons for metered-dose inhalers

13. The Technology and Economic Assessment Panel is expected to present a further report on the issue of campaign production. The Parties may wish to continue to consider the issue of campaign production and, if appropriate, to forward a proposal for consideration at the high-level segment.

(c) Consideration of amendments to the handbook on essential-use nominations (decision XX/3)

14. In accordance with decision XX/3, the Technology and Economic Assessment Panel recommended a range of amendments to the handbook on essential-use nominations to facilitate a more informed review of future nominations for essential-use exemptions. This issue was discussed during the twenty-ninth meeting of the Open-ended Working Group, where it was agreed to forward a draft decision by the relevant contact group's co-chairs for further consideration by the Twenty-First Meeting of the Parties. It can be found as draft decision XXI/[G] in chapter I of document UNEP/OzL.Pro.21/3.

8. Issues related to methyl bromide

(a) Presentation by the Technology and Economic Assessment Panel

15. The Parties are expected hear a presentation from the Panel on issues related to methyl bromide, including its final review of nominations for methyl bromide critical-use exemptions, its final report on quarantine and pre-shipment issues, the proposed 2010 workplan of the methyl bromide technical options committee and any proposed changes to the assumptions that the Panel uses to evaluate and make recommendations on critical-use exemptions.

(b) Consideration of nominations for critical-use exemptions for 2010 and 2011

16. The Parties are expected to agree upon a decision on the exemption requests for consideration and action at the high-level segment.

(c) Quarantine and pre-shipment applications of methyl bromide

17. In accordance with decision XX/6, the Secretariat will be holding a one-day workshop on quarantine and pre-shipment issues immediately prior to the Twenty-First Meeting of the Parties. The Parties are expected to consider any further steps that they wish to propose based on the outcomes of that workshop and the Technology and Economic Assessment Panel's final report on this issue.

9. Other issues arising out of the report of the Technology and Economic Assessment Panel

(a) Alternatives to hydrochlorofluorocarbons in the refrigeration and air-conditioning sectors in Parties operating under paragraph 1 of Article 5 with special conditions (decision XIX/8)

18. The Parties are expected to consider what actions, if any, should be recommended for adoption at the high-level segment as a result of the Panel's final report on this issue.

(b) Projected regional imbalances in the availability of halons and potential mechanisms for the improved prediction and mitigation of such imbalances (decision XIX/16)

19. The Parties are expected to consider what actions, if any, should be recommended for adoption at the high-level segment as a result of the Panel's final report on this issue.

(c) Proposal on laboratory and analytical-use exemptions (decisions XVII/10 and XIX/18)

20. The Parties are expected to consider further the issue of laboratory and analytical uses of ozone-depleting substances. During the twenty-ninth meeting of the Open-ended Working Group, representatives agreed to forward to the Twenty-First Meeting of the Parties a draft decision on this issue on the understanding that further work would be undertaken intersessionally to refine the proposal.

The latest version of that draft proposal can be found as draft decision XXI/[A] in chapter I of document UNEP/OzL.Pro.21/3.

(d) Proposal on process agents (decision XVII/6 and paragraph 100 of the report of the Twentieth Meeting of the Parties)

21. The Parties are expected to consider further the issue of ozone-depleting substances used as process agents. During the twenty-ninth meeting of the Open-ended Working Group, representatives agreed to forward to the Twenty-First Meeting of the Parties a draft decision on this issue on the understanding that further work would be undertaken intersessionally to refine the proposal. The latest version of that draft proposal can be found as draft decision XXI/[B] in chapter I of document UNEP/OzL.Pro.21/3.

(e) Proposal on potential further work on carbon tetrachloride emissions

22. The Parties are expected to consider further the issue of emissions of carbon tetrachloride. During the twenty-ninth meeting of the Open-ended Working Group, representatives agreed to forward to the Twenty-First Meeting of the Parties a draft decision on this issue on the understanding that further work would be undertaken intersessionally to refine the proposal. The latest version of that draft proposal can be found as draft decision XXI/[C] in chapter I of document UNEP/OzL.Pro.21/3.

(f) Other issues arising out of the Panel's reports

23. The Parties are expected to consider other issues arising out of the Panel's reports, including any requests to endorse new co-chairs of the Panel or its technical options committees.

10. Issues related to the financial mechanism of the Montreal Protocol

(a) Proposal on terms of reference for an evaluation of the financial mechanism

24. At the twenty-ninth meeting of the Open-ended Working Group, representatives discussed the possibility of a future evaluation of the Multilateral Fund and agreed to forward a related draft decision for the consideration of the Twenty-First Meeting of the Parties. It can be found as draft decision XXI/[E] in chapter I of document UNEP/OzL.Pro.21/3.

(b) Proposal on institutional strengthening activities under the Multilateral Fund

25. At the twenty-ninth meeting of the Open-ended Working Group, representatives discussed a draft proposal related to the funding of institutional strengthening through the Multilateral Fund and agreed to forward that draft decision for the consideration of the Twenty-First Meeting of the Parties. It can be found as draft decision XXI/[F] in chapter I of document UNEP/OzL.Pro.21/3.

11. Compliance and data reporting issues

(a) Proposal on the treatment of stockpiled ozone-depleting substances relative to compliance (decision XVIII/17)

26. The Parties are expected to consider further the issue of stockpiled ozone-depleting substances relative to compliance. During the twenty-ninth meeting of the Open-ended Working Group, representatives agreed to forward to the Twenty-First Meeting of the Parties a draft decision on this issue on the understanding that further work would be undertaken intersessionally to refine the proposal. The latest version of that draft proposal can be found as draft decision XXI/[D] in chapter I of document UNEP/OzL.Pro.21/3.

(b) Presentation on and consideration of the work and recommended decisions of the Implementation Committee

27. The President of the Implementation Committee will report on the status of ratification of the Vienna Convention, the Montreal Protocol and Protocol amendments, in addition to issues considered at the Committee's forty-second and forty-third meetings. The Parties will consider the Committee's recommendations on compliance issues. A draft decision recording the status of ratification is included as draft decision XXI/[AA] in chapter III of document UNEP/OzL.Pro.21/3. Any compliance-related draft decisions emanating from the Committee's meetings are expected to be distributed to the Parties on the second day of the preparatory segment of the Twenty-First Meeting of the Parties. The Parties are expected to consider the related issues and make recommendations for the high-level segment, as appropriate.

12. Other matters.

28. The Parties will consider other matters identified and agreed upon during the adoption of the agenda for the meeting.

B. High-level segment (7–8 November 2009)**1. Opening of the high-level segment**

29. The high-level segment of the Twenty-First Meeting of the Parties to the Montreal Protocol is scheduled to be opened on 7 November at 10 a.m.

(a) Statement by the representative(s) of the Government of Egypt**(b) Statement by representative(s) of the United Nations****(c) Statement by the President of the Twentieth Meeting of the Parties**

30. Opening statements will be made by representatives of the Government of Egypt, the United Nations and the President of the Twentieth Meeting of the Parties.

2. Organizational matters**(a) Election of officers for the Twenty-First Meeting of the Parties**

31. In accordance with rule 21 of the rules of procedure, the Twenty-First Meeting of the Parties must elect a President, three Vice-Presidents and a Rapporteur. Rule 21 provides that the offices of President and Rapporteur “shall normally be subject to rotation among the five groups of States referred to in Section 1, paragraph 1, of General Assembly resolution 2997 (XXVI) of 15 December 1972. A representative of a Party from the group of Eastern European States presided over the Twentieth Meeting of the Parties, while a representative of a Party from the group of Asian and Pacific States served as Rapporteur. On the basis of past practice of rotation according to English alphabetical order, the Parties may wish to elect a Party from the group of Latin American and Caribbean States to preside over the Twenty-First Meeting and a Party from the group of Eastern European States as Rapporteur. The Parties may also wish to elect three additional Vice-Presidents, one each from the groups of African States, Asian and Pacific States and Western European and other States.

(b) Adoption of the agenda of the Twenty-First Meeting of the Parties

32. The Parties may wish to adopt the agenda for the high-level segment, including any items that they may agree to include under item 9, “Other matters”.

(c) Organization of work

33. The President of the Twenty-First Meeting of the Parties is expected to outline a plan of work to enable the agenda items to be covered.

(d) Credentials of representatives

34. In accordance with rule 18 of the rules of procedure for Meetings of the Parties to the Montreal Protocol, the credentials of representatives must be submitted to the Executive Secretary of the meeting, if possible not later than 24 hours after the opening of the Meeting. In accordance with rule 19 of the rules of procedure, the officers of the meeting must examine the credentials and submit their report thereon to the Parties.

3. Status of ratification of the Vienna Convention, the Montreal Protocol and the amendments to the Montreal Protocol

35. The Parties will review the status of ratification of the instruments agreed under the ozone regime. A draft decision recording the status of ratification can be found as XXI/[AA] in chapter III of document UNEP/OzL.Pro.21/3.

4. Presentations by the assessment panels on the status of their work with a focus on the latest developments

36. The assessment panels will make a brief presentation on their work with a particular focus on any new developments.

- 5. Presentation by the Chair of the Executive Committee of the Multilateral Fund on the work of the Executive Committee, the Multilateral Fund Secretariat and the Fund's implementing agencies**
 37. The Chair of the Executive Committee of the Multilateral Fund will present the report of the Executive Committee to the Parties, as circulated in document UNEP/OzL.Pro.21/6.
 - 6. Statements by heads of delegations**
 38. Heads of delegations will be invited to make statements.
 - 7. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Twenty-First Meeting of the Parties**
 39. The co-chairs of the preparatory segment will be invited to report to the Parties on the progress made in reaching consensus on the substantive issues on the agenda.
 - 8. Dates and venue for the Twenty-Second Meeting of the Parties**
 40. The Parties will be informed of any information regarding the potential venue for the Twenty-Second Meeting of the Parties.
 - 9. Other matters**
 41. Any additional substantive issues agreed for inclusion on the agenda under item 2 (c), "Adoption of the agenda", will be taken up under this agenda item.
 - 10. Adoption of decisions by the Twenty-First Meeting of the Parties**
 42. The Parties will adopt the decisions to be taken at the current meeting.
 - 11. Adoption of the report of the Twenty-First Meeting of the Parties**
 43. The Parties will adopt the report of the current meeting.
 - 12. Closure of the meeting**
 44. The Twenty-First Meeting of the Parties is expected to close by 6 p.m. on Sunday, 8 November 2009.
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**Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that
Deplete the Ozone Layer**
Port Ghalib, Egypt, 4–8 November 2009

Provisional agenda

I. Preparatory segment (4–6 November 2009)

1. Opening of the preparatory segment:
 - (a) Statements by representative(s) of the Government of Egypt;
 - (b) Statements by representative(s) of the United Nations Environment Programme.
2. Organizational matters:
 - (a) Adoption of the agenda of the preparatory segment;
 - (b) Organization of work.
3. Consideration of membership of Montreal Protocol bodies for 2010:
 - (a) Members of the Implementation Committee;
 - (b) Members of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol;
 - (c) Co-Chairs of the Open-ended Working Group.
4. Financial reports of the trust funds for the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and budgets of the Montreal Protocol.
5. Environmentally sound management of banks of ozone-depleting substances (decision XX/7):
 - (a) Presentation of the final analysis of the task force of the Technology and Economic Assessment Panel;
 - (b) Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting.
6. High-global-warming-potential alternatives to ozone-depleting substances (decision XX/8):
 - (a) Proposed amendment to the Montreal Protocol;

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- (b) Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting.
- 7. Issues related to essential-use exemptions:
 - (a) Proposal on nominations for essential-use exemptions for 2010 and 2011;
 - (b) Campaign production of chlorofluorocarbons for metered-dose inhalers;
 - (c) Consideration of amendments to the handbook on essential-use nominations (decision XX/3).
- 8. Issues related to methyl bromide:
 - (a) Presentation by the Technology and Economic Assessment Panel;
 - (b) Consideration of nominations for critical-use exemptions for 2010 and 2011;
 - (c) Quarantine and pre-shipment applications of methyl bromide;
- 9. Other issues arising out of the report of the Technology and Economic Assessment Panel:
 - (a) Alternatives to hydrochlorofluorocarbons in the refrigeration and air-conditioning sectors in Parties operating under paragraph 1 of Article 5 with special conditions (decision XIX/8);
 - (b) Projected regional imbalances in the availability of halons and potential mechanisms for the improved prediction and mitigation of such imbalances (decision XIX/16);
 - (c) Proposal on laboratory and analytical-use exemptions (decisions XVII/10 and XIX/18);
 - (d) Proposal on process agents (decision XVII/6 and paragraph 100 of the report of the Twentieth Meeting of the Parties);
 - (e) Proposal on potential further work on carbon tetrachloride emissions;
 - (f) Other issues arising out of the Panel's reports.
- 10. Issues related to the financial mechanism of the Montreal Protocol:
 - (a) Proposal on terms of reference for an evaluation of the financial mechanism;
 - (b) Proposal on institutional strengthening activities under the Multilateral Fund.
- 11. Compliance and data reporting issues:
 - (a) Proposal on the treatment of stockpiled ozone-depleting substances relative to compliance (decision XVIII/17);
 - (b) Presentation on and consideration of the work and recommended decisions of the Implementation Committee.
- 12. Other matters.

II. High-level segment (7 and 8 November 2009)

- 1. Opening of the high-level segment:
 - (a) Statements by representative(s) of the Government of Egypt;
 - (b) Statements by representative(s) of the United Nations;
 - (c) Statement by the President of the Twentieth Meeting of the Parties.
- 2. Organizational matters:
 - (a) Election of officers for the Twenty-First Meeting of the Parties;
 - (b) Adoption of the agenda of the Twenty-First Meeting of the Parties;
 - (c) Organization of work;
 - (d) Credentials of representatives.
- 3. Status of ratification of the Vienna Convention, the Montreal Protocol and the amendments to the Montreal Protocol.

4. Presentation by the assessment panels on the status of their work with a focus on the latest developments.
 5. Presentation by the Chair of the Executive Committee of the Multilateral Fund on the work of the Executive Committee, the Multilateral Fund Secretariat and the Fund's implementing agencies.
 6. Statements by heads of delegations.
 7. Report by the Co-Chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Twenty-First Meeting of the Parties.
 8. Dates and venue for the Twenty-Second Meeting of the Parties.
 9. Other matters.
 10. Adoption of decisions by the Twenty-First Meeting of the Parties.
 11. Adoption of the report of the Twenty-First Meeting of the Parties.
 12. Closure of the meeting.
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**Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that
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Port Ghalib, Egypt, 4–8 November 2009

Item 6 (a) of the provisional agenda
for the preparatory segment*

**High-global-warming-potential alternatives to
ozone-depleting substances (decision XX/8):
proposed amendment to the Montreal Protocol**

Item 10 of the provisional agenda
for the high-level segment*

**Adoption of decisions by the Twenty-First Meeting
of the Parties to the Montreal Protocol**

Draft decisions and proposed amendments to the Montreal Protocol

Addendum

Note by the secretariat

1. Pursuant to paragraph 2 of Article 9 of the Vienna Convention, the Secretariat is circulating in the annex to the present note a joint proposal submitted by Canada, Mexico and the United States of America intended to supplement the amendment proposal previously submitted by the Federated States of Micronesia and Mauritius. The latter proposal is contained in section B of chapter II of document UNEP/OzL.Pro.21/3. The annex also contains summary points of the proposed amendment.

2. The contents of the annex are being circulated as received and have not been formally edited by the Secretariat.

* UNEP/OzL.Pro.21/1.

Annex

Summary Points: North American HFC Submission to the Montreal Protocol

1. The North American proposal is a clarification or supplement to the Mauritius and Micronesia proposal which is formally under consideration under the Protocol this year having been submitted prior to the May 4 deadline for amendments. The following are key elements of the proposal:

- (a) Lists 20 specified HFCs as a new Annex F to the Protocol (including two substances sometimes referred to as HFOs).
- (b) Recognizes that there are not alternatives for all HFC applications and therefore utilizes a phasedown mechanism, as opposed to a phaseout.
- (c) Establishes provisions for developed country (non-Article 5) phasedown of production and consumption:
 - (i) Uses a baseline of the average of 2004-2006 annual production and consumption of HCFCs and HFCs
 - (ii) Initiates the phasedown in 2013
 - (iii) Achieves a final phasedown plateau of 15% of baseline in 2033.
- (d) Establishes provisions for developing country (Article 5) phasedown of production and consumption:
 - (i) Uses a baseline of the average of 2004-2006 annual production and consumption of HCFCs and HFCs
 - (ii) Initiates the phasedown in 2016
 - (iii) Achieves a final phasedown plateau of 15% of baseline in 2043.
- (e) Both developed and developing country phasedowns include interim steps between initiation and the final plateau step.
- (f) Introduces weighting using Global Warming Potential for HFCs as compared to typical Montreal Protocol practice of Ozone Depleting Potential
- (g) Includes provisions to strictly limit HFC-23 byproduct emissions resulting from the production of HCFCs (e.g. HCFC 22).
- (h) Requires licensing of HFC imports and exports, and bans imports and exports to non-Parties.
- (i) Finally, requires reporting on production and consumption of HFCs, as well as on HFC-23 byproduct emissions.

2. Relationship with the UNFCCC:

- (a) The proposal envisions an amendment to the Montreal Protocol, and a related decision by the UNFCCC confirming the Montreal Protocol approach.
- (b) It would leave unchanged the provisions of the UNFCCC / Kyoto Protocol that govern HFCs.
- (c) The Montreal Protocol obligations would be consistent with, and additional to, UNFCCC and/or Kyoto Protocol obligations. Parties could follow Montreal Protocol obligations as a way to meet some of their UNFCCC obligations with regard to HFCs.

Text of HFC Phasedown Submission

[Preambular language placeholder]

Article I: Amendment

A. Article 1, paragraph 4

In paragraph 4 of Article 1 of the Protocol, for the words:

“Annex C or Annex E”

there shall be substituted:

“Annex C, Annex E or Annex F”

B. Article 2, paragraph 5

In paragraph 5 of Article 2 of the Protocol, for the words:

“and Article 2H”

there shall be substituted:

“Articles 2H and 2J”

C. Article 2, paragraph 5 ter

The following paragraph shall be added after paragraph 5 *bis* of Article 2 of the Protocol:

“5 *ter*. Any Party not operating under paragraph 1 of Article 5 may, for one or more control periods, transfer to another such Party any portion of its calculated level of consumption set out in Article 2 J, provided that the calculated level of consumption of controlled substances in Annex F of the Party transferring the portion of its calculated level of consumption did not exceed [0.25] kilograms per capita in [2008] and that the total combined calculated levels of consumption of the Parties concerned do not exceed the consumption limits set out in Article 2J. Such transfer of consumption shall be notified to the Secretariat by each of the Parties concerned, stating the terms of such transfer and the period for which it is to apply.”

D. Article 2, paragraphs 8(a) and 11

In paragraphs 8(a) and 11 of Article 2 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”

E. Article 2, paragraph 9

The “and” at the end of subparagraph 9(a)(i) of Article 2 of the Protocol shall be moved to the end of subparagraph 9(a)(ii).

The following subparagraph shall be inserted after subparagraph 9(a)(ii) of Article 2 of the Protocol:

“(iii) Adjustments to the global warming potentials specified in Annexes C and F should be made and, if so, what the adjustments should be;”

In paragraph 9(c) of Article 2 of the Protocol, the following language shall be inserted immediately after the words “In taking such decisions”:

“under subparagraphs 9(a)(i) and (ii)”:

For the final semi-colon of paragraph 9(c) of Article 2 of the Protocol there shall be substituted:

“. In taking such decisions under subparagraph 9(a)(iii), the Parties shall reach agreement by consensus only;”

F. Article 2J

The following Article shall be inserted after Article 2I of the Protocol:

Article 2J: Hydrofluorocarbons

1. Each Party shall ensure that for the twelve-month period commencing on 1 January [2013], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [ninety] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C, Group I controlled substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, its the average of calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C, Group I controlled substances. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of the average of its calculated level of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.
2. Each Party shall ensure that for the twelve-month period commencing on 1 January [2017], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [eighty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I controlled substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [eighty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C, Group I substances. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of the average of its calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.
3. Each Party shall ensure that for the twelve-month period commencing on 1 January [2020], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [seventy] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [seventy] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of the average of its calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.
4. Each Party shall ensure that for the twelve-month period commencing on 1 January [2025], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [fifty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [fifty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of the average of its calculated levels of production in [2004, 2005 and 2006] of Annex F plus Annex C Group I substances.
5. Each Party shall ensure that for the twelve-month period commencing on 1 January [2029], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [thirty] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [thirty] per cent of the average of its calculated levels of consumption in [2004, 2005, and

2006] of Annex F plus Annex C Group I substances. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of the average of its calculated levels of production in [2004, 2005 and 2006] of Annex F plus Annex C Group I substances.

6. Each Party shall ensure that for the twelve-month period commencing on 1 January [2033], and in each 12-month period thereafter, its calculated level of consumption of the controlled substances in Annex F does not exceed, annually, [fifteen] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. Each Party producing one or more of these substances shall, for the same period, ensure that its calculated level of production of the substances does not exceed, annually, [fifteen] per cent of the average of its calculated levels of consumption in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances. However, in order to satisfy the basic domestic needs of the Parties operating under paragraph 1 of Article 5, its calculated level of production may exceed that limit by up to ten per cent of the average of its calculated levels of production in [2004, 2005, and 2006] of Annex F plus Annex C Group I substances.

7. Each party shall ensure that for the 12-month period commencing on January 1, 2013, and in each 12-month period thereafter, its calculated level of production of Annex F, Group II substances generated as a byproduct of the manufacture of Annex C, Group I substances shall not exceed zero except to the extent that emissions of Annex F, Group II substances from facilities that manufacture Annex C, Group I substances, together with emissions of Annex F, Group II substances from facilities that destroy [more than 2.14 metric tons per year of] Annex F, Group II substances, do not exceed [0.1 percent] of the mass of Annex C, Group I substances manufactured in processes producing Annex F, Group II substances as a byproduct. For purposes of this paragraph, notwithstanding the definition of production in paragraph 5 of Article 1, the calculated level of production of Annex F, Group II substances generated as a byproduct shall include amounts destroyed onsite or at another facility.

8. Each Party shall ensure that any destruction of Annex F, Group II substances generated by facilities that produce Annex C, Group I substances shall occur only by technologies to be approved by the Parties.

G. Article 3

In the preamble to Article 3 of the Protocol, for the words:

“2A to 2I”

there shall be substituted:

“2A to 2J”

In the preamble to Article 3 of the Protocol, for the words:

“Annex C or Annex E”

there shall be substituted:

“Annex C, Annex E or Annex F”

For the final semi-colon of subparagraph (a)(i) of Article 3 of the Protocol there shall be substituted:

“, or by the global warming potential specified in respect of it in Annex F;”

For the period at the end of subparagraph (c) of Article 3 of the Protocol there shall be substituted a semi-colon, and the “and” at the end of subparagraph (b) of Article 3 of the Protocol shall be moved to the end of subparagraph (c).

The following clause should be added to the end of Article 3 of the Protocol:

“(d) Emissions of Annex F, Group II substances by adding together all emissions of such substances from facilities that produce Annex C, Group I substances, or from facilities that destroy [more than [2.14][1.69] metric tons of] Annex F, Group II substances per year. For facilities that produce Annex C, Group I substances, emissions shall equal the amount of Annex F, Group II substances generated at the facility,

including amounts emitted from equipment leaks, process vents, and thermal oxidizers, but excluding amounts destroyed on site, stored on site, shipped off site for sale, or shipped off site for destruction.”

H. Article 4, paragraph 1 sept

The following paragraph shall be inserted after paragraph 1 *sex* of Article 4 of the Protocol:

“1 *sept.* Within one year of the date of entry into force of this paragraph, each Party shall ban the import of the controlled substances in Annex F from any State not party to this Protocol.”

I. Article 4, paragraph 2 sept

The following paragraph shall be inserted after paragraph 2 *sex* of Article 4 of the Protocol:

“2 *sept.* Within one year of the date of entry into force of this paragraph, each Party shall ban the export of the controlled substances in Annex F to any State not party to this Protocol.”

J. Article 4, paragraphs 5, 6 and 7

In paragraphs 5, 6 and 7 of Article 4 of the Protocol, for the words:

“Annexes A, B, C and E”

there shall be substituted:

“Annexes A, B, C, E and F”

K. Article 4, paragraph 8

In paragraph 8 of Article 4 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”

L. Article 4B

The following paragraph shall be inserted after paragraph 2 of Article 4B of the Protocol:

“2 *bis.* Each Party shall, by 1 January 2013 or within three months of the date of entry into force of this paragraph for it, whichever is later, establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annex F. Any Party operating under paragraph 1 of Article 5 that decides it is not in a position to establish and implement such a system by 1 January 2013 may delay taking those actions until 1 January 2015.”

M. Article 5, paragraph 4

In paragraph 4 of Article 5 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”

N. Article 5, paragraphs 5 and 6

In paragraphs 5 and 6 of Article 5 of the Protocol, for the words:

“Article 2I”

there shall be substituted:

“Articles 2I and 2J”

O. Article 5, paragraph 8 qua

The following paragraph shall be inserted after paragraph 8 *ter* of Article 5 of the Protocol:

“8 *qua*. Each Party operating under paragraph 1 of this Article shall, in order to meet its basic domestic needs, be entitled to delay its compliance with the control measures set out in paragraphs 1, 2 and 3 of Article 2J for three years, in paragraphs 4 and 5 of Article 2J for six years, and in paragraph 6 of Article 2J for ten years, subject to any adjustments made to the control measures in Article 2J in accordance with Article 2(9).”

P. Article 6

In Article 6 of the Protocol, for the words:

“Articles 2A to 2I”

there shall be substituted:

“Articles 2A to 2J”

Q. Article 7, paragraphs 2, 3 and 3 ter

The following line shall be inserted after the line that reads “— in Annex E, for the year 1991,” in paragraph 2 of Article 7 of the Protocol:

“— in Annex F, for the years 2004, 2005, and 2006,”

In paragraphs 2 and 3 of Article 7 of the Protocol, for the words:

“C and E”

there shall be substituted:

“C, E and F”

The following paragraph shall be added to Article 7 of the Protocol after paragraph 3 *bis*:

“3 *ter*. Each Party shall provide to the Secretariat statistical data of its annual emissions of Annex F, Group II controlled substances in accordance with Article 3(d) of the Protocol, as well as the amount of Annex F, Group II substances captured and destroyed by technologies to be approved by the Parties.”

R. Article 10, paragraph 1

In Article 10, paragraph 1 of the Protocol, for the words:

“Articles 2A to 2E and Article 2I”

There shall be substituted:

“Articles 2A to 2E, Article 2I, and paragraphs 1 to 6 of 2J”

S. Annex C and Annex F

Annex C, Group I is amended to add the 100-year Global Warming Potential for the following substances:

Substance	100 year Global Warming Potential
HCFC-21	151
HCFC-22	1,810
HCFC-123	77
HCFC-124	609
HCFC-141b	725
HCFC-142b	2,310
HCFC-225ca	122
HCFC-225cb	595

A new Annex F shall be added to the Protocol, following Annex E. It shall read:

Annex F: Controlled Substances

Group	Substance	100 year Global Warming Potential
<i>Group I</i>		
	HFC-32	675
	HFC-41	92
	HFC-125	3,500
	HFC-134	1,100
	HFC-134a	1,430
	HFC-143	353
	HFC-143a	4,470
	HFC-152	53
	HFC-152a	124
	HFC-161	12
	HFC-227ea	3,220
	HFC-236cb	1,340
	HFC-236ea	1,370
	HFC-236fa	9,810
	HFC-245ca	693
	HFC-245fa	1,030
	HFC-365mfc	794
	HFC-43-10mee	1,640
	HFC-1234yf (HFO-1234yf)	4
	HFC-1234ze (HFO-1234ze)	6
 <i>Group II</i>		
	HFC-23	14,800

Article II: Relationship to the 1999 Amendment

No State or regional economic integration organization may deposit an instrument of ratification, acceptance or approval of or accession to this Amendment unless it has previously, or simultaneously, deposited such an instrument to the Amendment adopted at the Eleventh Meeting of the Parties in Beijing, 3 December 1999.

Article III: Relationship to the United Nations Framework Convention on Climate Change and Its Kyoto Protocol

This Amendment is not intended to have the effect of excepting hydrofluorocarbons from the scope of the commitments contained in Articles 4 and 12 of the United Nations Framework Convention on Climate Change and in Articles 2, 5, 7 and 10 of its Kyoto Protocol that apply to “greenhouse gases not controlled by the Montreal Protocol.” Each party to this Amendment shall continue to apply the provisions of the United Nations Framework Convention on Climate Change and its Kyoto Protocol identified above to HFCs as long as those provisions, respectively, remain in force with respect to such party.

Article IV: Entry into force

1. Except as noted in paragraph 2, below, this Amendment shall enter into force on 1 January 2011, provided that at least twenty instruments of ratification, acceptance or approval of the Amendment have been deposited by States or regional economic integration organizations that are Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. In the event that this condition has not been fulfilled by that date, the Amendment shall enter into force on the ninetieth day following the date on which it has been fulfilled.

2. The changes in Sections H and I of Article I of this Amendment shall enter into force on 1 January 2011, provided that at least seventy instruments of ratification, acceptance or approval of the Amendment have been deposited by States or regional economic integration organizations that are Parties to the Montreal

Protocol on Substances that Deplete the Ozone Layer. In the event that this condition has not been fulfilled by that date, the Amendment shall enter into force on the ninetieth day following the date on which it has been fulfilled.

3. For purposes of paragraphs 1 and 2, any such instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by member States of such organization.

4. After the entry into force of this Amendment, as provided under paragraphs 1 and 2, it shall enter into force for any other Party to the Protocol on the ninetieth day following the date of deposit of its instrument of ratification, acceptance or approval.



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**Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that
Deplete the Ozone Layer**
Port Ghalib, Egypt, 4–8 November 2009

**Report of the Twenty-First Meeting of the Parties to the
Montreal Protocol on Substances that Deplete the Ozone Layer**

Introduction

1. The Twenty-First Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer was held at the International Convention Centre, Port Ghalib, Egypt, from 4 to 8 November 2009. It consisted of a preparatory segment, held from 4 to 6 November, and a high-level segment, held on 7 and 8 November.

Part one: Preparatory segment

I. Opening of the preparatory segment

2. The preparatory segment was opened by its Co-Chairs, Mr. Muhammad Maqsood Akhtar (Pakistan) and Mr. Martin Sirois (Canada), on Wednesday, 4 November 2009, at 10.20 a.m.

3. Opening statements were delivered by Mr. Maged George, Minister for the Environment of Egypt, and Mr. Marco González, Executive Secretary of the Ozone Secretariat.

4. In his statement, Mr. George stressed the importance of the Montreal Protocol as an international environmental treaty and reviewed the process by which it had achieved universal ratification. He said that while much had been done it was necessary to ramp up efforts to protect the ozone layer by, among other things, providing accurate data about quantities of imported restricted substances. National programmes should be implemented to rid the world of ozone-depleting substances and to increase opportunities for action by customs authorities, including through awareness campaigns. Pointing out that the world was watching and anticipating tangible results from the current meeting, he wished the representatives successful deliberations and declared the meeting officially open.

5. The Executive Secretary, thanking the Government of Egypt for hosting the current meeting, pointed out that it was the first meeting since the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol had obtained universal ratification with the accession of Timor-Leste on the International Day for the Preservation of the Ozone Layer, 16 September 2009. The ozone treaties, with 196 Parties, had more Parties than any other treaty in history, and no other treaty with so many Parties had ever achieved universal ratification. He also noted that a second milestone was the impending complete phase-out on 1 January 2010 of the majority of ozone-depleting substances by Parties operating under paragraph 1 of Article 5 of the Protocol. That many developing countries had already achieved that goal demonstrated that, with the right support, developing countries were willing not only to take on weighty obligations but also to exceed them.

6. He went on to review the agenda for the current meeting, pointing out that the workload was heavy and that the Parties would have to discuss such complex issues as the destruction of banks of ozone-depleting substances, amendments to the Protocol and quarantine and pre-shipment applications of methyl bromide. On reporting, he observed that the timeliness of Parties in meeting their reporting obligations had declined somewhat and urged them to do their utmost to meet reporting deadlines. In conclusion, he recalled that the current meeting was a paperless and therefore environmentally beneficial one, and noted that the eighth editions of the Convention and Protocol handbooks had been made available in electronic format only. He wished representatives a successful meeting, drawing attention to the scale of the challenges that would determine the future effectiveness of the Protocol in protecting the ozone layer.

II. Organizational matters

A. Attendance

7. The Twenty-First Meeting of the Parties to the Montreal Protocol was attended by representatives of the following Parties to the Montreal Protocol: Afghanistan, Angola, Argentina, Armenia, Australia, Austria, Bahamas, Bangladesh, Belarus, Belgium, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Cambodia, Cameroon, Canada, Central African Republic, Chad, China, Colombia, Comoros, Congo, Cook Islands, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Czech Republic, Denmark, Djibouti, Dominica, Dominican Republic, Egypt, Equatorial Guinea, Eritrea, Estonia, Ethiopia, European Community, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau, Haiti, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Lithuania, Madagascar, Malawi, Mali, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Qatar, Republic of Korea, Romania, Russian Federation, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Thailand, the former Yugoslav Republic of Macedonia, Timor-Leste, Togo, Tonga, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Uzbekistan, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia, Zimbabwe.

8. A representative of the Occupied Palestinian Territory attended the meeting as an observer.

9. Representatives of the following United Nations bodies and specialized agencies also attended: Food and Agriculture Organization of the United Nations, Secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol, Secretariat of the United Nations Framework Convention on Climate Change, United Nations Development Programme, United Nations Environment Programme, United Nations Industrial Development Organization, World Bank.

10. The following intergovernmental, non-governmental and industry bodies were also represented: Acme, African Development Co. for Trade, AGRAMKOW/RTI Technologies, Alliance for Responsible Atmospheric Policy, Alliant International University, Arysta Life Science North America Corporation, Asada Corporation, Association of Home Appliance Manufacturers, Atmospheric Policy, Ayona Company, Limited, California Citrus Quality Council, California Strawberry Commission, Center for Air Power Studies, Chemtura Corporation, Chicago Climate Exchange, Daikin Europe NV, Desclean Belgium, DuPont International, Environmental Investigation Agency, Florida Fruit & Vegetable Association/Crop Protection Coalition, Free Trade Company, Green Cooling Association, Green English, Greenpeace International, GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit GmbH), Gujarat Fluorochemicals Limited, ICL Industrial Products, Industrial Technology Research Institute, Insects Limited, Institute for Governance and Sustainable Development, International Institute of Refrigeration, Japan Fluorocarbon Manufacturers Association, Japan Refrigeration and Air Conditioning Industry Association, Johnson Controls, Manitoba Ozone Protection Industry Association, Nordiko Quarantine Systems Pty. Ltd., Ltd., McQuay International, Mebrom NV, MOPIA, Natural Resources Defense Council, Navin Fluorine International Limited, Research, Innovation and Incubation

Center, Sanyo Electric Co., Ltd, SAW for Trade, Shecco, Sherry Consulting, SRF Limited, the Arab Drug Company, TouchDown Consulting.

B. Officers

11. The preparatory segment of the combined meeting was co-chaired by Mr. Maqsood Akhtar and Mr. Sirois.

C. Adoption of the agenda for the preparatory segment

12. The following agenda for the preparatory segment was adopted on the basis of the provisional agenda contained in document UNEP/OzL.Pro.21/1:

1. Opening of the preparatory segment:
 - (a) Statements by representative(s) of the Government of Egypt;
 - (b) Statements by representative(s) of the United Nations Environment Programme.
2. Organizational matters:
 - (a) Adoption of the agenda for the preparatory segment;
 - (b) Organization of work.
3. Consideration of membership of Montreal Protocol bodies for 2010:
 - (a) Members of the Implementation Committee;
 - (b) Members of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol;
 - (c) Co-Chairs of the Open-ended Working Group.
4. Financial reports of the trust funds for the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and budgets of the Montreal Protocol.
5. Environmentally sound management of banks of ozone-depleting substances (decision XX/7):
 - (a) Presentation of the final analysis of the task force of the Technology and Economic Assessment Panel;
 - (b) Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting.
6. High-global-warming-potential alternatives to ozone-depleting substances (decision XX/8):
 - (a) Proposed amendment to the Montreal Protocol;
 - (b) Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting.
7. Issues related to essential-use exemptions:
 - (a) Proposal on nominations for essential-use exemptions for 2010 and 2011;
 - (b) Campaign production of chlorofluorocarbons for metered-dose inhalers;
 - (c) Consideration of amendments to the handbook on essential-use nominations (decision XX/3).
8. Issues related to methyl bromide:
 - (a) Presentation by the Technology and Economic Assessment Panel;
 - (b) Consideration of nominations for critical-use exemptions for 2010 and 2011;
 - (c) Quarantine and pre-shipment applications of methyl bromide;
9. Other issues arising out of the report of the Technology and Economic Assessment Panel:

- (a) Alternatives to hydrochlorofluorocarbons in the refrigeration and air-conditioning sectors in Parties operating under paragraph 1 of Article 5 with special conditions (decision XIX/8);
 - (b) Projected regional imbalances in the availability of halons and potential mechanisms for the improved prediction and mitigation of such imbalances (decision XIX/16);
 - (c) Proposal on laboratory and analytical-use exemptions (decisions XVII/10 and XIX/18);
 - (d) Proposal on process agents (decision XVII/6 and paragraph 100 of the report of the Twentieth Meeting of the Parties);
 - (e) Proposal on potential further work on carbon tetrachloride emissions;
 - (f) Other issues arising out of the Panel's reports.
10. Issues related to the financial mechanism of the Montreal Protocol:
- (a) Proposal on terms of reference for an evaluation of the financial mechanism;
 - (b) Proposal on institutional strengthening activities under the Multilateral Fund.
11. Compliance and data reporting issues:
- (a) Proposal on the treatment of stockpiled ozone-depleting substances relative to compliance (decision XVIII/17);
 - (b) Presentation on and consideration of the work and recommended decisions of the Implementation Committee.
12. Other matters.

13. During the adoption of the agenda for the preparatory segment, the Parties agreed to take up under agenda item 12, "Other matters", a proposal by Indonesia pertaining to the special conditions facing Timor-Leste as a new Party.

D. Organization of work

14. The Parties agreed to follow their customary procedure and to establish contact groups as necessary.

III. Consideration of membership of Montreal Protocol bodies for 2010

A. Members of the Implementation Committee

B. Members of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

C. Co-Chairs of the Open-ended Working Group

15. Introducing the item, the Co-Chair recalled that it would be necessary at the current meeting to nominate candidates for several positions in Montreal Protocol bodies for 2010. He requested the regional groups to submit nominations to the Ozone Secretariat. The Parties subsequently agreed on the membership of the Implementation Committee and the Executive Committee and on Co-Chairs of the Open-ended Working Group and approved draft decisions reflecting that agreement for further consideration during the high-level segment.

IV. Financial reports of the trust funds for the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and budgets of the Montreal Protocol

16. Introducing the item, the Co-Chair noted that it had been the practice at past meetings to establish a budget committee to review budget-related documents and prepare one or more draft

decisions on budgetary matters for consideration by the Meeting of the Parties. Accordingly, the Parties agreed to establish such a committee, to be co-chaired by Mr. Alessandro Giuliano Peru (Italy) and Mr. Ives Enrique Gómez Salas (Mexico).

17. Following the deliberations in the budget committee the Parties considered a draft decision prepared by the committee, which they approved for further consideration during the high-level segment.

V. Environmentally sound management of banks of ozone-depleting substances (decision XX/7)

A. Presentation of the final analysis of the task force of the Technology and Economic Assessment Panel

18. Introducing the sub-item, the Co-Chair recalled that by decision XX/7 the Parties had requested the Technology and Economic Assessment Panel to consider a number of issues related to ozone-depleting-substance banks, to present a preliminary report on its findings to the Parties at the twenty-ninth meeting of the Open-ended Working Group and to present a final analysis for consideration by the Twenty-First Meeting of the Parties.

19. Mr. Paul Ashford, Mr. Lambert Kuijpers and Mr. Paulo Vodianitskaia, co-chairs of the task force set up by the Technology and Economic Assessment Panel to respond to decision XX/7, outlined the contents of the final analysis. Mr. Ashford began by presenting a snap-shot of the anticipated waste flows in developed and developing countries for 2010. Over 100,000 tonnes of ozone-depleting substances would enter the waste stream in each region; chlorofluorocarbons (CFCs) accounted for a higher proportion in developing countries, although both regions had substantial flows of hydrochlorofluorocarbon (HCFC) refrigerants, while hydrofluorocarbons (HFCs) would be a significant component in developed countries, even as early as 2010. He highlighted the fact that the opportunity for recovery and destruction, and therefore for reducing ozone depletion, was at its greatest in the early years of the review period (2010–2030): upwards of 40,000 ODP-tonnes of ozone-depleting substances would be available annually at the outset but that would decline to less than 20,000 ODP-tonnes by 2015. The potential impact of recovery and destruction on the climate was also at its greatest in the early years of the review period, peaking at above 350 megatonnes of carbon dioxide equivalent annually for refrigerants in developing countries alone.

20. Mr. Kuijpers observed that most end-of-life-equipment programmes would have the ability to manage not only ozone-depleting substances but also substitutes, some of which would have significant climate impacts of their own.

21. Mr. Ashford presented information on the impact of including substitutes in the analysis. He noted that overall flows would increase throughout the review period and that the potential climate benefit from recovery and destruction would be sustained, particularly for refrigerants. The average global-warming potential of refrigerants entering the waste stream in developed countries would be higher than in developing countries, a fact that highlighted the climate challenge posed by accelerated HCFC phase-out under decision XIX/6 with existing alternatives. He also provided information on the peak flows that might need to be accommodated. While global destruction capacity was probably sufficient to accommodate those flows, there could be logistical challenges in transporting ozone-depleting substances to suitable facilities. Good practice would involve minimizing transport distances for equipment and consolidating the substances as soon as practicable.

22. Turning to the climate mitigation costs in the sectors in which destruction could be achieved with low or medium effort, the range for refrigerants was typically \$8–16 per tonne of carbon dioxide equivalent in developed countries but up to more than \$30 per tonne of carbon dioxide equivalent in developing countries, where transport and logistics could be more challenging. In the early years, recovery and destruction in developing countries could be particularly cost-effective (perhaps as low as \$5 per tonne of carbon dioxide equivalent) because of the large CFC component of the mixes reaching the waste stream. Foam recovery costs were significantly higher, rising from less than \$10 per tonne of carbon dioxide equivalent (because of the large CFC component) to more than \$50 per tonne of carbon dioxide equivalent by 2015, even for the most accessible foams in domestic refrigerators. He concluded that foam recovery would be best conducted in combination with refrigerant recovery.

23. Mr. Vodianitskaia assisted Mr. Ashford in reviewing the conclusions set out in the final analysis. Given the level of financing that would be required for the management and destruction of ozone-depleting substances contained in banks, it was likely that climate-linked funding would be required. They drew attention to the progress being made by the voluntary carbon market in developing protocols and methodologies that could provide funding for destruction. They noted, however, that the capacity of the voluntary markets was constrained, as was the degree to which that capacity could be directed to specific projects, which limited the utility of the voluntary markets. They referred to a number of ideas on forms of hybrid financing through possible pre-compliance mechanisms. In concluding, the task force co-chairs highlighted the value of acting quickly to gain the most benefits at the least cost.

24. Following the Task Force presentation the representative of Brazil pointed out that the data in the Task Force report on ozone-depleting substance banks in Brazil was not recognized as official data. In response to questions from other representatives, the task force co-chairs clarified a number of issues. Mr. Ashford explained that the focus of the study was on future flows of ozone-depleting substance wastes but not specifically on contaminated or unwanted ozone-depleting substances. Some relevant information on such substances had been gathered, however, for a study requested by the Executive Committee in 2006, and the Panel could examine the issue if requested to do so by Parties. Mr. Vodianitskaia said that the use of both automated and semi-automated technologies for the recovery of ozone-depleting refrigerants were considered in the study. With regard to potential financing options, Mr. Ashford said that justifications existed for pursuing recapture and destruction strategies for ozone-depleting substances present in many types of banks, and suggested that revenue generated by the destruction of relatively accessible substances could be used to fund more challenging destruction efforts.

25. The Parties took note of the final analysis.

B. Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting

26. Introducing the sub-item, the Co-Chair recalled that in accordance with decision XX/7, the Secretariat had convened a one-day workshop on the management and destruction of banks of ozone-depleting substances immediately before the twenty-ninth meeting of the Open-ended Working Group. The workshop, along with the preliminary report of the Technology and Economic Assessment Panel referred to in the preceding section and a report by the Secretariat on funding options, had contributed to a robust discussion on the issue of banks during the Working Group meeting, as reflected in the report of that meeting. In a contact group established at that meeting several ideas had been put forward on further actions that might be taken on the management and destruction of banks of ozone-depleting substances. Those initial ideas had been recorded in a report of the contact group and were set out in annex I to document UNEP/OzL.Pro.21/2. The Co-Chair suggested that at the current meeting the Parties should discuss the ideas developed during the meeting of the Open-ended Working Group, the Technology and Economic Assessment Panel report and a draft decision on destruction of ozone-depleting substances in banks that had been submitted by the United States of America.

27. The representative of the United States introduced his Government's draft decision, noting that the destruction of existing ozone-depleting substances present in banks would make a positive contribution both to protecting the ozone layer and to mitigating climate change. He said that some of the central challenges of destroying ozone-depleting substances under the Protocol included creating incentives to encourage effective and efficient destruction, avoiding the creation of perverse incentives and developing measures appropriate to the Protocol, given that its focus was on eliminating production and consumption rather than destruction. The draft decision sought to develop a practical way forward, taking into account the diverse opinions expressed at the working group meeting.

28. All the representatives taking the floor thanked the Technology and Economic Assessment Panel for its analysis (as discussed in section A above). Many said that the report made clear that the potential emissions from ozone-depleting-substance banks represented a significant threat to both the ozone layer and the climate system. A number of suggestions were offered for further analyses that could be conducted by the Panel, the Executive Committee of the Multilateral Fund or the Parties themselves. One representative said that the estimated costs in the Panel's report were based on the unrealistic assumption that all ozone-depleting substances entering the waste stream would be destroyed.

29. Several representatives called for the immediate adoption of specific short-term and long-term strategies for managing ozone-depleting-substance banks, for providing support through the Multilateral Fund to increase the number and scope of ozone-depleting-substance destruction projects and for supporting Parties in their efforts to strengthen their capacity to manage banks. Others, however, agreed that the Parties needed to tackle the issue but suggested that more study was needed before a long-term approach could be adopted. Some called for the adoption of initial measures, to be augmented as more was learned. One representative said that activities relating to the destruction of contaminated and unwanted ozone-depleting substances should be prioritized.

30. Many representatives observed that there were links between ozone-depleting-substance banks and destruction and other environmental issues. They said that the Parties and the Ozone Secretariat should continue to seek dialogue with the Global Environment Facility, the World Bank and the Parties and secretariats of other relevant multilateral environment agreements to explore synergies on the issue, including in respect of funding.

31. A number of representatives said that the draft decision submitted by the United States offered a useful basis for further discussion.

32. The representative of Colombia submitted a conference room paper setting out another draft decision on the destruction of ozone-depleting substances in banks.

33. The Parties agreed to establish a contact group, to be co-chaired by Ms. Annie Gabriel (Australia) and Mr. Mazen K. Hussein (Lebanon), to continue considering the issue, taking into account the results of the Open-ended Working Group contact group, the draft decisions submitted by Colombia and the United States, decision XX/7, the report of the Technology and Economic Assessment Panel and other relevant information.

34. Following its deliberations the contact group presented a draft decision on the environmentally sound management of banks of ozone-depleting substances, which the Parties approved for further consideration during the high-level segment.

VI. High-global-warming-potential alternatives to ozone-depleting substances (decision XX/8)

A. Proposed amendment to the Montreal Protocol

35. The representative of Mauritius introduced an amendment to the Montreal Protocol that his country was proposing together with the Federated States of Micronesia (UNEP/OzL.Pro.21/3, chapter II), explaining that the proposal remained unchanged from the proposal that the two Parties had submitted at the twenty-ninth meeting of the Open-ended Working Group. Welcoming a proposal to amend the Protocol by Canada, Mexico and the United States, which added certain elements to the proposal that he was presenting, he said that the issue to which the proposals were directed was an urgent one requiring swift action.

36. The representatives of Canada, Mexico and the United States jointly presented their proposal (UNEP/OzL.Pro.21/3/Add.1). It included what they termed a “phase-down”, or gradual reduction, of HFC production and consumption in both Parties operating under paragraph 1 of Article 5 and those not so operating and was intended to supplement the amendment proposed by the Federated States of Micronesia and Mauritius. It would create a new annex F to the Protocol to include HFCs, establish as a baseline for those substances the average of 2004–2006 annual production and consumption of HCFCs and HFCs, permit countries seeking to phase out HCFCs to use HFCs in some sectors, establish phase-down schedules, require the licensing of HFC imports and exports, prohibit imports and exports to non-Parties and provide for assistance to developing countries through the Multilateral Fund. The rationale for the proposal was that the use of HFCs and their harmful effects stemmed from their use as alternatives to ozone-depleting substances, that their use was likely to increase and that the Protocol community had both the expertise needed to deal with the issue and a proven record of success. Further, such an amendment would send a useful message to the global community, including especially the private sector, that HFC use was merely a temporary measure pending the development of safe permanent alternatives.

37. In the ensuing discussion, all representatives who took the floor agreed on the impressive achievements of the Montreal Protocol in phasing out CFCs and HCFCs and the need for alternatives to ozone-depleting substances that did not contribute to global warming. It was also generally agreed that there was a need for an analysis of costs and funding arrangements. More information in greater detail

was required, such as comparative studies of the impact of HFCs in relation to other greenhouse gases and the availability and cost of viable alternative substances. Existing alternatives were unsatisfactory, since they suffered from flammability or other limitations, and life-cycle assessments were required. The representative of the European Community referred to a proposal by the European Union under the Climate Change Convention calling for a clause enabling synergies between the Montreal Protocol and the Climate Change Convention and its Kyoto Protocol.

38. There were, however, divergent views as to whether the proposed amendments to the Protocol should move forward. While some representatives advocated moving ahead swiftly, others suggested that the proposals should be developed in more detail based on further discussion and more complete data; still others preferred to await developments at the fifteenth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, to take place in Copenhagen in December 2009, and to allow more time for in-depth study.

39. Several representatives of Parties operating under paragraph 1 of Article 5 said that they were reluctant to support the proposals on the grounds that, among other things, existing commitments to phase out HCFCs involved substantial work and should not be compromised. Pointing out that HFCs were currently the main alternative in over 90 per cent of cooling applications, they said that they were loath to consider new measures that would restrict their use. One representative said that such phase-outs could hamstring economic growth in developing countries. Several representatives stressed the need for all countries to be involved in the reduction and phase-out processes. Others expressed doubt about the legality of including non-ozone-depleting substances, such as HFCs, within the Montreal Protocol, given that they were already within the purview of the Kyoto Protocol to the Convention on Climate Change, and expressed a preference for avoiding potential political conflicts in international law by maintaining the status quo.

40. A representative of a non-governmental environmental organization said that neither of the proposed amendments would provide sufficient environmental protection. He urged the Parties to adopt a global phase-out of HFCs by 2020, with a simultaneous phase-out in developed and developing countries, and to provide adequate funding for developing countries. Developing countries would benefit by moving quickly to advanced, environmentally friendly technologies, with funding that might otherwise be unavailable, and by advancing global efforts to combat serious climate change, which would affect them first and most severely. The representative of an industry association whose members marketed ozone-depleting-substance alternatives expressed support for establishing controls on HFCs under the Protocol, saying that there were technologically and economically feasible options, including natural refrigerants. Establishing controls under the Protocol would provide clear indications to industry that would spur additional technical developments.

41. The Parties agreed to establish a contact group, co-chaired by Ms. Laura Berón (Argentina) and Mr. Mikkel Aaman Sorensen (Denmark), to discuss the proposed amendments along with other issues pertaining to high-global-warming-potential alternatives to ozone-depleting substances.

42. Following the deliberations of the contact group its chair reported that members of the group had been unable to reach agreement on a draft decision on the amendment of the Protocol to include HFCs. In the light of that lack of agreement a declaration signed by a number of Parties was subsequently introduced. The declaration was tabled under item 9 of the agenda for the high-level segment of the meeting (Other matters) and is therefore discussed in chapter IX of part II of the present report.

B. Further consideration of work initiated by the Open-ended Working Group at its twenty-ninth meeting

43. Turning to the sub-item, closely related to the preceding one, the Co-Chair recalled that in accordance with decision XX/8 the Secretariat had organized a one-day open-ended dialogue on high-global-warming-potential substitutes for ozone-depleting substances prior to the twenty-ninth meeting of the Open-ended Working Group. The Working Group had discussed the results of the dialogue together with the proposed amendment to the Montreal Protocol submitted by the Federated States of Micronesia and Mauritius discussed above, along with specific proposals put forward by several other Parties. The Working Group had agreed to forward two draft decisions and a list of concepts related to the proposed amendment to the Meeting of the Parties for further consideration. The two draft decisions were set out as draft decisions XXI/[I] and XXI/[J] in chapter I of document UNEP/OzL.Pro.21/3. The list of concepts and questions was available in the report of the Open-ended Working Group and was reproduced in annex II to document UNEP/OzL.Pro.21/2.

44. With reference to key ideas in the draft decisions and the list of concepts, one representative said that sufficient information existed on alternatives to HFCs to allow the Parties to take a decision and to develop processes for gathering additional information to assist the transition away from HFCs. He said that his Government had submitted an information paper to the Secretariat, which would be available later in the meeting, that would provide information relevant to some of the questions raised by representatives during discussion of the proposed amendments. Another representative said that further discussion and clarification of several of the concepts delineated by the Open-ended Working Group during a contact group meeting would help move the discussions forward.

45. As noted in the preceding section, the Parties agreed to establish a contact group, co-chaired by Ms. Berón and Mr. Sorensen, to discuss high-global-warming-potential alternatives to ozone-depleting substances, including the proposed amendments to the Montreal Protocol relating to HFCs discussed in the preceding section.

46. Following its deliberations the contact group presented a draft decision on HCFCs and environmentally sound alternatives, which the Parties approved for further consideration during the high-level segment.

VII. Issues related to essential-use exemptions

A. Proposal on nominations for essential-use exemptions for 2010 and 2011

47. Introducing the sub-item, the Co-Chair recalled that the Technology and Economic Assessment Panel had reviewed nominations for essential-use exemptions for CFCs for metered-dose inhalers for 2010 and 2011 prior to the twenty-ninth meeting of the Open-ended Working Group. The Panel had made various recommendations and a draft decision had been prepared by a contact group set up during that meeting. That draft decision had been forwarded to the current meeting for further consideration and was set out in document UNEP/OzL.Pro.21/3 as draft decision XXI/[H]. The United States, whose nomination of CFCs for use in metered-dose inhalers containing epinephrine as an active ingredient the Panel had been unable to recommend, had submitted a revised nomination, which the Panel had also been unable to recommend. The Co-Chair invited comments with a view to reaching a consensus on the draft decision.

48. The representative of the United States pointed out that the Party's original request for 67 tonnes of CFCs had been revised downwards to 52 tonnes and that following public review the Government had determined that it would no longer seek essential-use exemptions for epinephrine-based metered-dose inhalers after the current round of nominations. He also said that the current nomination took account of stocks of CFCs available to the manufacturer. Efforts to allow for an adequate transition were complicated since there was no direct replacement for epinephrine-based metered-dose inhalers, which were available over the counter. The alternative required a prescription and so was less readily available to patients. One further year was therefore being requested to allow adequate time to educate patients and ensure a safe transition for them.

49. The representative of Pakistan said that the Panel had recommended 34 tonnes for metered-dose inhalers for his country, 100 tonnes less than the amount nominated. That posed a problem as the manufacturer of the alternative had decided to discontinue its production, which was therefore no longer available.

50. One representative noted the efforts of several countries to reduce CFC use in metered-dose inhalers, while pointing out that his country would request no CFCs for essential uses in 2010. Proven alternatives could be used, he said, and phase-out obligations could be met. Another representative explained that his country would contact pharmaceutical companies to undertake an inventory of all CFC stocks. It would also look into alternative substances and would encourage and plan the recycling and reuse of CFCs.

51. The Parties agreed to establish a contact group to discuss the nominations further, to be chaired by Mr. W. L. Sumathipala (Sri Lanka) and Ms. Robyn Washbourne (New Zealand).

52. Subsequently the representative of the Russian Federation introduced a conference room paper containing a draft decision on the Party's 2010 essential-use nomination for the use of CFC-113 for aerospace applications. The Parties agreed that the contact group referred to in the preceding paragraph would also discuss the nomination by the Russian Federation.

53. Following its deliberations the contact group presented a draft decision on 2010 essential-use nominations for the use of CFCs in metered-dose inhalers and a draft decision on the Russian Federation's essential-use nomination for the use of CFCs in the aerospace industry. The Parties approved both draft decisions for further consideration during the high-level segment.

B. Campaign production of chlorofluorocarbons for metered-dose inhalers

54. Under the sub-item Ms. Helen Tope, co-chair of the Medical Technical Options Committee, gave a presentation on the final report of the Technology and Economic Assessment Panel and its Medical Technical Options Committee in response to decision XX/4 on final campaign production of CFCs for metered-dose inhalers. She explained that the Panel and the Committee had previously recommended such final campaign production when they had learned that China could supply itself and that a producer located in Spain could supply enough CFCs to satisfy the essential uses of other Parties operating under paragraph 1 of Article 5. Since that time, however, the European Community had banned the further production of pharmaceutical-grade CFCs, with effect from 1 January 2010. Given that action, she said, it was difficult to predict where CFCs for the production of metered-dose inhalers under essential-use exemptions would be obtained in 2010 and beyond, or whether a coordinated final campaign of production would still be relevant or recommended. The Panel and the Committee would continue to follow developments but would be unable to provide Parties with a detailed response to decision XX/4 until the Parties clarified the CFC production situation.

55. She next outlined estimated CFC requirements for metered-dose inhalers after 2009, production issues for metered-dose-inhaler manufacturers and possible scenarios for the future supply of bulk pharmaceutical-grade CFCs, including single or multiple production facilities, remaining stockpiles that would otherwise be destroyed and the abrupt cessation of CFC-based metered-dose-inhaler manufacture. She suggested that Parties might wish to consider how and where CFCs could be produced for any approved essential-use exemptions for metered-dose inhalers, how to facilitate the use of existing stockpiles that might otherwise be destroyed and a fixed timetable for CFC production at one or more facilities to avoid open-ended production. She emphasized that there was an urgent need to complete the transition to CFC-free inhalers as swiftly as possible to ensure a reliable supply of inhalers.

56. In the ensuing discussion, the representative of the European Community pointed out a factual error in the presentation, noting that the Union had not suddenly decided to cease exports of CFCs in 2010 and that the proposal to halt such exports had originally been tabled in August 2008.

57. Several representatives sought further discussion of the matter. One said that campaign production presented many challenges for industry and patients alike. Cost was a serious issue and a decision was needed at the current meeting, he said, lest his country and others be adversely affected. Another said that multiple production facilities would be needed in the interest of asthma sufferers and other patients. Producers in his country were making CFCs for domestic use and for export to Parties operating under paragraph 1 of Article 5 and wished to continue doing so. A third representative said that information was needed about the quantity of stockpiled pharmaceutical-grade CFCs.

58. The Parties agreed that the contact group set up to consider essential-use nominations would also consider campaign production. The decisions agreed to by the contact group are referred to in section A above.

C. Consideration of amendments to the handbook on essential-use nominations (decision XX/3)

59. Introducing the sub-item, the Co-Chair drew attention to the draft decision set out in document UNEP/OzL.Pro.21/3 (draft decision XXI/G), noting that it contained changes to the handbook on essential-use nominations agreed by the Parties at the twenty-ninth meeting of the Open-ended Working Group in accordance with decision XX/3 and some new changes suggested by the Technology and Economic Assessment Panel. He suggested that discussion should focus on the Panel's suggested new changes.

60. In the ensuing discussion the amendments were generally welcomed. One representative pointed out that the amendments were linked to essential-use nominations and, seconded by another, proposed that they should therefore be discussed in the contact group set up to discuss essential uses and campaign production of CFCs.

61. One representative said that since metered-dose inhalers were extremely important for human health it was difficult to phase out CFCs. Indeed, some developed countries had yet to phase them out after more than 10 years, while in developing countries the effort to do so had only just begun. Some substitutes were unsatisfactory, so final phase-out dates could not be predicted, and developing countries needed time to overcome technical problems. The Open-ended Working Group at its twenty-ninth meeting had discussed important issues for Parties operating under paragraph 1 of Article 5 regarding the export of CFCs for metered-dose inhalers and the further amendment of the handbook on essential-use nominations. Those issues required further discussion in a contact group during the current meeting.

62. The Parties agreed that the contact group set up to consider essential-use nominations and campaign production of CFCs (as discussed in sections A and B above) would also consider the amendments to the handbook.

63. The chair of the contact group subsequently reported that the group had agreed not to recommend adoption of the changes to the essential-use handbook that had been proposed by the Technology and Economic Assessment Panel. Those changes would have called on Parties submitting essential-use nominations to provide additional information along with their nominations, notably in respect of market conditions in Parties to which CFCs would be exported for use in metered-dose inhalers. Parties operating under paragraph 1 of Article 5 had expressed concern in the contact group about their ability to collect the required information and the contact group had accordingly agreed not to recommend the changes. The contact group had also agreed that in cases in which the Medical Technical Options Committee required additional information it should work bilaterally with the Party in question to obtain it. The group recommended that in such cases both the Committee and the Party should refer to decisions X/9, XII/2 and XIV/5, which the contact group felt would be helpful in filling any information gaps.

VIII. Issues related to methyl bromide

A. Presentation by the Technology and Economic Assessment Panel

64. Introducing the sub-item, the Co-Chair invited the representatives of the Technology and Economic Assessment Panel to make a presentation on the final assessment of critical-use nominations and to summarize briefly the presentation that the Panel had given during the workshop on quarantine and pre-shipment uses of methyl bromide held on 3 November 2009.

65. The co-chairs of the Methyl Bromide Technical Options Committee, Mr. Ian Porter, Ms. Marta Pizano, Mr. Mohamed Besri and Ms. Michelle Marcotte, gave the presentation on the final assessment of critical-use nominations, summarizing the findings set out in the report of the Technology and Economic Assessment Panel on evaluations of 2009 critical-use nominations for methyl bromide and related matters.

66. Mr. Besri began the presentation with an overview of the critical-use nominations sought for 2010 and 2011. He noted that since 2005 there had been a progressive trend by all Parties to reduce their nominations both for pre-plant soil and post-harvest uses, although that had occurred at varying rates. The European Community, New Zealand and Switzerland had completely phased out all critical uses. The total number of nominations submitted had fallen from 42 nominations submitted by five Parties in the 2008 round to 36 for the current round. No nominations in the current round had initially been submitted for periods beyond 2011.

67. In the 2009 round, the Committee had considered nominations for 2,885 tonnes of methyl bromide for soil uses and 180 tonnes for post-harvest uses. Compared to 2008, nominations had fallen from 4,740 tonnes for soil uses and 292 tonnes for post-harvest uses. The amount of methyl bromide stocks held by Parties had decreased considerably for all Parties from 2005 to 2008, except for the United States, where stocks stood at over twice the annual nominations by that Party. Information on the location, form, ownership and availability of those stocks was, however, unreported.

68. A work plan for 2011 was then presented showing the tasks and timelines for critical-use nomination assessments and the preparation of the 2010 assessment report.

69. Mr. Porter presented the nominations received for pre-plant soil use of methyl bromide in 2010 and 2011. At the Committee's first meeting, interim recommendations had been made on 27 critical-use nominations for pre-plant soil use submitted by Australia, Canada, Israel, Japan and the United States. In the Committee's final assessment, no change had been made to 20 critical-use exemption interim

recommendations, but seven nominations (one from Australia and six from the United States) had been reassessed after bilateral discussions at the twenty-ninth meeting of the Open-ended Working Group and at the request of the Parties, who had provided new information. Two recommendations had been amended based on new technical data and the submission of an action plan. Consequently, the Committee had recommended 3,591.710 tonnes for soil use in 2010, whereas 92.660 tonnes had not been recommended. For 2011, the Committee had recommended 2,500.814 tonnes and not recommended 343.511 tonnes.

70. He reported that Israel, Japan and the United States had made significant progress in phasing out methyl bromide for the vegetable sectors in the current round, but further reductions for the largest remaining use of methyl bromide (the strawberry fruit nomination by the United States) were of concern. Progress in Japan to meet its action plan to phase out methyl bromide by 2013 would be assisted by the recent registration of methyl iodide.

71. Further reductions in some nominations were restricted by increasing regulation of the use of current alternatives to methyl bromide. A lack of long-term studies for perennial crop uses, and for nursery uses to prove equivalent plant health risk in respect of methyl bromide and alternatives, were preventing the adoption of alternatives for those uses. He also noted that some Parties continued to use high methyl bromide and chloropicrin mixtures when lower mixtures were considered effective. He urged Parties to consider the further adoption of barrier films in key sectors to reduce the amount of methyl bromide for which exemptions were sought, which would be more in line with decision IX/6.

72. Ms. Marcotte reported that good progress was being made in reducing the amounts nominated for critical-use exemptions. For example, Australia had indicated that it did not agree with the Methyl Bromide Technical Option Committee's recommendations but would work with the Committee to come to a mutually acceptable result; Canada had enacted new legislation enabling methyl bromide to be shared between applications in the same sector, thereby reducing the volume of methyl bromide for which nominations were submitted. She went on to give further details of reductions in other Parties.

73. She reported that 180.487 tonnes of methyl bromide had been nominated for critical uses in food processing structures and commodities in 2009. Of that amount, 4.5 tonnes had been recommended for uses in 2010 and 174.187 tonnes in 2011. The total recommendation for critical-use nominations for post-harvest uses was therefore 172.925 tonnes.

74. She drew attention to the critical-use recommendations explained in the Panel's report, summarizing the results and the key reasons for the decisions made. While noting good progress on post-harvest critical-use nominations, she pointed out that some barriers to adoption were hampering progress towards reducing methyl bromide use to zero. Those included the lack of maximum residue limits for fluoride residues resulting from sulphuryl fluoride fumigation in Canada and a failure to expand minimal risk levels in the United States, which hindered the adoption of alternatives by flour and pasta mills and pet food facilities. There was also a lack of registered alternatives for cheese and cured pork that had been infested in storage.

75. She highlighted the risk that current levels of use would persist unless critical-use applicants made extra efforts and the Parties worked with their applicants and regulators to remove barriers. She requested the Parties to ensure funding for Committee members early in 2010 to enable efficient work planning in respect of its assessment report and critical-use nominations.

76. Following the presentations the Co-Chair opened the floor for questions.

77. One representative requested clarification regarding fumigation in flour mills and asked whether the United States was converting to sulphuryl fluoride. The representative of the Methyl Bromide Technical Options Committee confirmed that it was, and that it was also expected to use heat treatment. She noted that the plants there were commercially owned and that their owners were selecting the most suitable method by trial and error.

78. Another representative observed that, according to the Panel, Parties operating under paragraph 1 of Article 5 had consumed a total of 3,115 tonnes of methyl bromide while accounting for three quarters of the world's population. He suggested that the technologies used in those countries could be applied elsewhere and questioned whether many of the uses for which exemptions had been granted should be regarded as critical in a sense that was equivalent to the use of CFCs for metered-dose inhalers. He asked when consumption for such uses would be reduced to zero.

79. The representative of the Methyl Bromide Technical Options Committee responded that situations varied by country or region regarding the registration of fumigants, the inspection of facilities and similar matters. The assessment reports explained in detail the exempt uses and the alternatives

available. The uses were regarded as critical in that pests in foods could affect human health and spread food-borne bacteria.

80. Ms. Pizano then presented the summary of the task force's final report on quarantine and pre-shipment. The task force had found that reported production of methyl bromide for exempted quarantine and pre-shipment uses had been approximately constant on an annual basis, and roughly at the same level as reported consumption, between 1999 and 2007.

81. With regard to consumption trends, she said that in 2007 reported consumption for quarantine and pre-shipment uses in Parties operating under paragraph 1 of Article 5 had for the first time exceeded that in Parties not so operating. Such consumption stood at 24 per cent of total global consumption of methyl bromide in 2000 and 54 per cent in 2007. That could reflect a trend towards increased treatment in countries of origin prior to shipment, increased trade from Parties operating under paragraph 1 of Article 5 at risk of infestation by quarantine pests or the adoption of alternatives in Parties not so operating. The task force had found a discrepancy of some 1,300 tonnes for Parties not operating under paragraph 1 of Article 5 for 2007 between total use estimated by bottom-up analysis and consumption data reported under Article 7. A discrepancy of similar magnitude was apparent in the annual figures for the period 2003–2007.

82. At least 68 per cent of total consumption (88 per cent of identified uses) resulted from five main categories of use: whole logs; pre-plant soil fumigation; wood and wood packaging material; grains; and fresh fruit and vegetables. Alternatives were known for all such uses, although there were specific instances in which those were not registered or were not technically or economically suitable for quarantine and pre-shipment applications.

83. Mr. Jonathan Banks, co-chair of the task force, continued the presentation with a description of available methyl bromide recapture facilities. He said that all existing commercial equipment relied on capture through activated carbon; this could be highly efficient but losses prior to capture reduced overall efficiency. Improved practices could reduce emissions during fumigation in many situations and had the potential to achieve the required control with less applied gas.

84. With regard to barriers to the adoption of alternatives, he drew attention to the need for alternatives to show very high efficacy and for proof that such efficacy was achieved by using a control measure as a single quarantine treatment. Regulations, whether domestic or international, that favoured methyl bromide use posed a major obstacle to the adoption of alternatives although few required its use. The low price of methyl bromide treatments, with minimal infrastructure requirements, provided little incentive to replace or develop replacements for methyl bromide. There was also a specific requirement for many quarantine and pre-shipment treatments to be rapid, limiting the use of some alternatives, particularly for post-entry quarantine.

85. He said that the task force had identified several data gaps in the information available, including incomplete records of production and consumption for quarantine and pre-shipment by Parties prior to 2002, data on the quantities of methyl bromide used for particular applications for 2007 or later for some Parties and the reason for differences between consumption and use over the period 2003–2007.

86. The task force had made preliminary estimates of quantities of methyl bromide for which technically feasible options existed. Sufficient data were available to inform the Parties of the quantities of methyl bromide currently being used for quarantine and pre-shipment, the value of that emissive use and the barriers to its replacement if they should wish to bring quarantine and pre-shipment emissions under some form of control. With the consequences clearly defined, it was the task force's opinion that Parties might wish to consider appropriate measures to control such emissions.

87. The Parties took note of the information presented.

B. Consideration of nominations for critical-use exemptions for 2010 and 2011

88. Introducing the sub-item, the Co-Chair noted that the presentation by the Panel on the issue had shown, in broad terms, the nominations received and the total amounts recommended. At the invitation of the Co-Chair one representative drew attention to a conference room paper submitted by her country, which contained a draft decision on critical-use exemptions for methyl bromide for 2010 and 2011.

89. In the ensuing discussion, several representatives expressed satisfaction with progress in reducing the use of methyl bromide, as demonstrated by the significantly lower amounts for which exemptions had been requested. Some representatives expressed concern, however, at the levels sought in the nominations, the high levels of remaining stocks, what they said was a lack of clarity as to

whether the stockpiles had actually been reduced and whether the amounts nominated and subsequently approved had actually been used and what they described as a lack of political will to move ahead rapidly in phasing out methyl bromide use in some areas. One representative expressed concern at the implications of such behaviour given that it could conflict with the provisions of the Protocol. Another suggested that attention should be paid to integrated pest management, which would reduce the overall number of pests and the need for methyl bromide. Some representatives stressed that proven alternatives existed, but that assertion was countered by one representative who said that not all alternatives were effective in all areas and at the same dosages. The representative of a non-governmental organization pointed out that one Party was using large amounts of methyl bromide and continuing to request substantial exemptions while maintaining considerable stocks.

90. Given the lack of immediate consensus on the matter, the Co-Chair invited interested Parties to undertake informal consultations and to work with the contact group discussing methyl bromide quarantine and pre-shipment issues (as discussed in section C below) in an effort to agree on the terms of the draft decision.

91. Following those consultations the contact group presented a draft decision, which was approved by the Parties for further consideration during the high-level segment.

C. Quarantine and pre-shipment applications of methyl bromide

92. Introducing the sub-item at the invitation of the Co-Chair, Mr. Leslie Smith (Grenada), co-chair of the workshop on quarantine and pre-shipment issues held immediately prior to the current meeting, gave a brief overview of the outcomes of the workshop, as described in document UNEP/OzL.Pro.21/INF/10. He drew attention to the discussions on alternatives to methyl bromide, new technologies, health effects and possible financing through the Multilateral Fund, among other things.

93. In the ensuing discussion, one representative called for technology studies to be undertaken and for support for developing countries, especially in terms of technology transfer, capacity-building and financial resources.

94. The Parties agreed to establish a contact group, to be co-chaired by Mr. Smith and Ms. Federica Fricano (Italy), to discuss further action with regard to quarantine and pre-shipment uses of methyl bromide, taking into account the outcomes of the workshop and the presentation by the Technology and Economic Assessment Panel.

95. During a subsequent discussion of the sub-item, the representative of the European Community introduced a draft decision on quarantine and pre-shipment uses of methyl bromide. The draft took into account information and discussions during the workshop, in addition to comments received from Parties, and contained square brackets to indicate differing views expressed by Parties on some issues.

96. In the ensuing discussion one representative said that her Government would be unable to provide information in accordance with the time frame outlined in the draft decision. Another emphasized the need to provide support to developing countries to eliminate the use of methyl bromide for quarantine and pre-shipment applications. One representative, noting that the draft decision was complex and that there were a number of unresolved issues, suggested that it might be impossible to reach agreement on it during the current meeting. Another highlighted the importance that his Government attached to quarantine and pre-shipment applications as a means of protecting its unique natural environment.

97. The Parties agreed that the contact group established under the item would further consider the draft decision.

98. Following the discussions in the contact group, a draft decision on quarantine and pre-shipment uses of methyl bromide was presented and approved by the Parties for further consideration during the high-level segment.

IX. Other issues arising out of the report of the Technology and Economic Assessment Panel

A. Alternatives to hydrochlorofluorocarbons in the refrigeration and air-conditioning sectors in Parties operating under paragraph 1 of Article 5 with special conditions (decision XIX/8)

99. Introducing the sub-item, the Co-Chair noted that, pursuant to decision XIX/8, the Technology and Economic Assessment Panel had presented the Open-ended Working Group at its twenty-ninth meeting with an interim report on alternatives to HCFCs in the refrigeration and air-conditioning sectors under high-temperature conditions. He drew attention to the complexity of the issues covered in that report and the agreement of the Open-ended Working Group to raise the matter at the current meeting.

100. In the ensuing discussion, several representatives of Parties with high ambient temperatures expressed concern at the lack of satisfactory alternatives in the refrigeration sector and about their countries' abilities to meet targets for the reduction of HCFCs. Another representative raised the issue of the accessibility, affordability and maintenance of new technologies, stressing the need for capacity-building, while a third requested the Panel to undertake an in-depth study of alternative technologies and their possible negative effects.

101. One representative introduced an expert who gave a briefing on new experiments in the use of natural refrigerants, such as carbon and ammonia cascades, and invited representatives to contact the German Technical Cooperation Agency for further details.

102. The Parties took note of the report and requested the Technology and Economic Assessment Panel to take the issues raised into consideration in its future work.

B. Projected regional imbalances in the availability of halons and potential mechanisms for the improved prediction and mitigation of such imbalances (decision XIX/16)

103. Introducing the sub-item, the Co-Chair said that at its twenty-ninth meeting the Open-ended Working Group had considered an initial report by the Technology and Economic Assessment Panel on regional imbalances in respect of halons and gave a summary of the main findings. He explained that the Working Group had agreed that the issue would be considered further at the current meeting.

104. At the invitation of the Co-Chair, the representative of the United States introduced a conference room paper that his country had jointly submitted with Australia and Canada that contained a draft decision on halons. In the ensuing discussion, another representative welcomed the draft decision and endorsed its objectives.

105. The Parties agreed that those and other interested Parties would undertake informal consultations in an effort to agree on the terms of the draft decision.

106. Following those consultations a draft decision on halons was presented and approved by the Parties for further consideration during the high-level segment.

C. Proposal on laboratory and analytical-use exemptions (decisions XVII/10 and XIX/18)

107. Introducing the sub-item, the Co-Chair recalled the lists of laboratory and analytical uses of ozone-depleting substances and alternatives thereto that had been presented to the Open-ended Working Group at its twenty-ninth meeting, which were set out in the 2009 progress report of the Technology and Economic Assessment Panel. At the twenty-ninth meeting a draft decision had been proposed and had since then been updated based on work undertaken during the intersessional period.

108. At the invitation of the Co-Chair, the representative of the European Community introduced a draft decision that the Party had submitted on a global laboratory-and analytical-use exemption (UNEP/OzL.Pro.21/3/Add.2, annex IV).

109. The Parties agreed that interested Parties should undertake informal consultations in an effort to agree on the terms of the draft decision.

110. Following those consultations a draft decision was presented and approved by the Parties for further consideration during the high-level segment.

D. Proposal on process agents (decision XVII/6 and paragraph 100 of the report of the Twentieth Meeting of the Parties)

111. Introducing the sub-item, the Co-Chair said that at its twenty-ninth meeting the Open-ended Working Group had heard reports by the Secretariat of the Multilateral Fund and the Technology and Economic Assessment Panel on issues relating to process agents. Following those presentations, revisions to the list of process agents had been proposed. The Working Group had agreed that work would be undertaken on the list during the intersessional period. A revised draft decision (UNEP/OzL.Pro.21/3/Add 2, annex III) had accordingly been submitted.

112. At the invitation of the Co-Chair, the representative of the European Community introduced the draft decision, which the Party had jointly submitted with Australia and the United States. The Parties approved the draft decision for further consideration during the high-level segment.

E. Proposal on potential further work on carbon tetrachloride emissions

113. The Co-Chair introduced the sub-item, drawing attention to a draft decision on potential further work on carbon tetrachloride emissions set out in the note by the Secretariat (UNEP/OzL.Pro.21/3, draft decision XXI/[C], as revised and reissued in UNEP/OzL.Pro.21/3/Add.2), which had been submitted by Sweden on behalf of the European Union.

114. The representative of Sweden said that the draft decision required further changes and would soon be ready. Two representatives said that the draft as it stood did not fully incorporate their concerns and proposed that they should work with the proponent in revising the draft. It was agreed that those three Parties would undertake informal consultations and present a revised draft decision for the consideration of the Parties.

115. Following those consultations a draft decision was presented and approved by the Parties for further consideration during the high-level segment.

F. Other issues arising out of the Panel's reports

116. The Co-Chair reported that the Technology and Economic Assessment Panel was proposing Mr. Roberto Peixoto (Brazil) as the new co-chair of the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee. The Parties endorsed the nomination and agreed that the Secretariat would prepare a draft decision on the matter, which the Parties subsequently approved for further consideration during the high-level segment.

X. Issues related to the financial mechanism of the Montreal Protocol

A. Proposal on terms of reference for an evaluation of the financial mechanism

117. The Co-Chair introduced draft decision XXI/[E], on an evaluation of the financial mechanism of the Montreal Protocol (UNEP/OzL.Pro.21/3). He recalled that that draft decision had been discussed at the twenty-ninth meeting of the Open-ended Working Group, where the Parties had been unable to agree on the dates by which terms of reference for the evaluation should be prepared and when the evaluation should be presented to the Parties.

118. Following the Co-Chair's presentation the Parties agreed to establish a contact group, co-chaired by Mr. David Omotosho (Nigeria) and Ms. Gudi Alkemade (Netherlands), to consider the draft decision further.

119. Following the contact group's deliberations a revised version of the draft decision was presented and approved by the Parties for further consideration during the high-level segment.

120. During discussion of the draft decision the representative of South Africa, speaking on behalf of African countries, drew attention to the capacity constraints faced by those countries. He noted that while African countries were willing to accept the decision as it stood it did not reflect their concerns. Specifically, they would have preferred to finalize the review by 2012 at the latest, as significant work on replenishment was scheduled to be undertaken in 2010 and 2011. In addition, they wished to know

the terms of reference for the basic document and who would propose that document. They also deemed it extremely important for the document to be discussed during meetings of ozone officer networks.

B. Proposal on institutional strengthening activities under the Multilateral Fund

121. The Co-Chair introduced draft decision XXI/[F], on institutional strengthening (UNEP/OzL.Pro.21/3), which had been submitted by the group of Latin American and Caribbean countries at the twenty-ninth meeting of the Open-ended Working Group, where it had been discussed at length. The draft decision would call upon the Executive Committee of the Multilateral Fund to increase funding for institutional strengthening and to extend it beyond 2010.

122. In the ensuing discussion, all representatives who took the floor agreed that institutional strengthening had played an important role in allowing Parties operating under paragraph 1 of Article 5 to meet their commitments to phase out ozone-depleting substances. There was general agreement that funding for institutional strengthening should continue beyond 2010. It was also generally agreed that institutional strengthening projects had facilitated the continuity of ozone-depleting substance phase-out projects and had contributed significantly to the implementation of the Protocol.

123. Several representatives stressed that, as noted in the draft decision, Parties operating under paragraph 1 of Article 5 still had much to do to phase out HCFCs, methyl bromide and other substances, which meant that continued institutional strengthening assistance was essential. One representative said that the Parties should not risk losing the momentum that the Montreal Protocol had generated by failing to extend institutional strengthening. Another called for institutional strengthening to be extended for a further 10 years after 2010.

124. Several representatives said that additional funding should be incorporated into existing HCFC management plans, while others said that the issue was technical in nature and could and should be handled by the Executive Committee of the Multilateral Fund. They called upon the Executive Committee to make proposals and offer guidance on reaching phase-out.

125. Following the discussion the Parties agreed that the contact group established to discuss a possible evaluation of the Protocol's financial mechanism, as discussed in section A above, should also discuss further the draft decision on institutional strengthening.

126. Following the contact group's deliberations a revised draft decision was presented and approved by the Parties for further consideration during the high-level segment.

XI. Compliance and data reporting issues

A. Proposal on the treatment of stockpiled ozone-depleting substances relative to compliance (decision XVIII/17)

127. Introducing the sub-item, the Co-Chair drew attention to the Secretariat's summary of the issue in paragraphs 63–67 of document UNEP/OzL.Pro.21/2. During the twenty-ninth meeting of the Open-ended Working Group, the representative of Sweden, on behalf of the European Union, had proposed a draft decision on the issue, which the Parties agreed to forward to the current meeting on the understanding that further work would be undertaken intersessionally to refine it. The latest version of the draft decision could be found in the note by the Secretariat (UNEP/OzL.Pro.21/3, chapter I, draft decision XXI/[D]).

128. The representative of Sweden, speaking on behalf of the European Union, outlined the draft decision, saying that it reflected consultations with Parties during the previous Open-ended Working Group meeting and comments received from a number of Parties intersessionally.

129. Several representatives expressed the view that the draft decision required further modification. One reiterated her Government's view that it introduced new concepts that would need to be carefully defined before the Parties could agree. Another representative said that the draft decision involved complex technical and legal matters with regard to a matter that did not currently constitute a significant compliance issue.

130. The Parties agreed that interested Parties would undertake informal consultations in an effort to develop a revised proposal for consideration.

131. Following those consultations the representative of Sweden, speaking on behalf of the European Union, said that discussions on the matter had yet to be finalized. Given that the issue was important but complicated, further discussions were required to reach a well-balanced, pragmatic and transparent common understanding. The Union would therefore continue its analysis of the issue with the aim of reaching an agreement. The Parties therefore agreed to place the issue on the agenda of the Twenty-Second Meeting of the Parties, on the understanding that the European Union would continue informal discussions intersessionally.

B. Presentation on and consideration of the work and recommended decisions of the Implementation Committee

132. The President of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, Ms. Washbourne, reported on the work of the Committee's forty-third meeting, which took place on 31 October and 1 November 2009. The full report of the meeting would be available on the Ozone Secretariat's website in due course. The Committee's work had been immensely assisted by the attendance at its meeting of representatives of the Multilateral Fund and its implementing agencies, including the Chair and Vice-Chair of the Fund's Executive Committee. The Implementation Committee had also been pleased to welcome representatives of Bangladesh, Botswana, Eritrea, Mexico and Somalia, who had provided information on the compliance situations of their countries. She also thanked the Ozone Secretariat.

133. The Committee, she said, was very pleased with the excellent progress by Parties in meeting their data reporting and phase-out obligations under the Protocol. The draft decisions that the Committee had agreed to forward for consideration by the Meeting of the Parties were contained in a conference room paper and reflected the Committee's work at its forty-second and forty-third meetings.

134. She then outlined the draft decisions approved by the Committee for consideration by the Meeting of the Parties. The first, on data reporting, listed six Parties that had yet to report ozone-depleting substance consumption and production data for 2008 in accordance with Article 7 of the Protocol. Those six Parties were Angola, Democratic People's Republic of Korea, Latvia, Malta, Nauru and United Arab Emirates. She noted that as only six Parties had not yet reported their data the rate of reporting was very high, with 187 out of 193 Parties having submitted their 2008 data. She also noted that 64 Parties had reported data for 2008 by 30 June 2009 in accordance with decision XV/15, observing that the early submission of data was exceptionally helpful to the work of the Committee.

135. Turning to the reported data she observed that many Parties operating under paragraph 1 of Article 5 had already succeeded in phasing out the consumption of many ozone-depleting substances, in advance of the 1 January 2010 deadline. Ninety-two Parties still consumed some volume of CFCs, but the vast majority consumed no halons, carbon tetrachloride, methyl chloroform or methyl bromide. The data, she said, indicated that the 2010 phase-out target would probably be met.

136. Most of the draft decisions, she noted, pertained to the compliance status of particular Parties. The draft decisions on Bosnia and Herzegovina, Mexico and Somalia recorded those Parties' non-compliance with their phase-out obligations for either CFCs or carbon tetrachloride. In each case the Committee had considered the circumstances that led to the state of non-compliance and examined the action plan that the Party had submitted to the Committee to demonstrate how it intended to return to compliance. The Committee looked forward to the Parties returning speedily to compliance and would monitor their progress carefully during future meetings.

137. Three other draft decisions pertained to three Parties whose data had revealed them to be in non-compliance: that on Saudi Arabia concerned that Party's CFC consumption in 2007, that on Turkmenistan its carbon tetrachloride consumption in 2007, and that on Vanuatu its CFC consumption in 2007 and 2008. In the light of their reported data the Committee had urged the three Parties to submit plans of action to ensure their prompt return to compliance, which the Committee would consider at its next meeting, in 2010.

138. The draft decision pertaining to the Federated States of Micronesia and the draft decision regarding Solomon Islands recorded that the two Parties had fallen into a state of non-compliance in one year but had returned to compliance the following year. The Committee had carefully reviewed both Parties' circumstances, in particular the measures that they had taken to control imports of ozone-depleting substances, and would continue to monitor their progress in future years.

139. The draft decision regarding Bangladesh related to an issue that the Committee and the Parties had discussed at some length during previous meetings. In 2006 Bangladesh had notified the Secretariat that it anticipated falling into non-compliance owing to difficulties in phasing out CFCs used in

metered-dose inhalers. The data subsequently reported by Bangladesh had indeed showed it to be in a state of non-compliance with its CFC consumption obligations for 2007 and 2008.

140. The Committee, however, was pleased to see that Bangladesh was making rapid progress in developing and commercializing non-CFC metered-dose inhalers. Immediately prior to the Committee's forty-third meeting the President of the Committee, the Chair of the Executive Committee and representatives of the Ozone and Multilateral Fund secretariats, UNEP, the United Nations Development Programme (UNDP) and the Medical Technical Options Committee had taken part in a high-level mission to Bangladesh to discuss the Party's situation. The mission participants had attended a ceremony to launch two new CFC-free metered-dose inhalers, and more such launches were anticipated. Bangladesh was also making progress with phasing out CFC use in the refrigeration and air-conditioning sector and it was expected that the Party would consume no more CFCs after 1 January 2010 except in accordance with essential-use exemptions approved by the Parties.

141. The draft decision on systems for licensing the import and export of ozone-depleting substances was the Committee's usual report on the number of Parties that had such systems, which was an obligation for all Parties to the Montreal Amendment. The Committee was pleased to learn that just four Parties to the Amendment had yet to implement licensing systems, including two that had only just ratified it. A further 12 Parties who had not ratified the Amendment had established licensing systems, leaving just 10 Parties to the Protocol without such systems.

142. The final draft decision related to the reporting of data on the consumption of methyl bromide for quarantine and pre-shipment use, which might be affected by related discussions by the Meeting of the Parties. The draft decision recalled that reporting of quarantine and pre-shipment data was required under paragraph 3 of Article 7 of the Protocol and that it was difficult for the Committee to assess Parties' states of compliance properly without such information.

143. The draft decisions, she said, illustrated the different stages of the Protocol's non-compliance procedure. It was worth remembering that the ozone community had built a flexible, sophisticated and successfully functioning compliance system that was internationally regarded with respect and as a model to be emulated under other agreements. It was important never to be complacent, however, particularly just two months away from the January 2010 phase-out date for most categories of ozone-depleting substance.

144. In conclusion she thanked her fellow Committee members for their hard work, support and dedication in helping her to carry out her duties.

145. Following Ms. Washbourne's presentation the Parties approved the draft decisions submitted by the Committee for further consideration during the high-level segment.

XII. Other matters

A. Observer status of the Occupied Palestinian Territory

146. The representative of the Occupied Palestinian Territory, expressing support for the intent of the Montreal Protocol and other efforts to protect the global environment, requested that the observer status of the Territory at meetings of the Parties be reviewed.

B. Difficulties faced by Timor-Leste as a new Party to the ozone treaties

147. The representative of Indonesia presented a conference room paper containing a draft decision submitted by her country and numerous other Parties from her region on the difficulties faced by Timor-Leste as a new Party to the Vienna Convention and the Montreal Protocol and its amendments.

148. Several Parties commended Timor-Leste for joining the international community's efforts to protect the ozone layer, with one offering to provide Timor-Leste with technical assistance. Another Party made several editorial suggestions, and it was agreed that informal consultations would be undertaken in an effort to agree on the draft decision.

149. Following those consultations a revised version of the draft decision was prepared and approved by the Parties for further consideration during the high-level segment.

Part two: high-level segment

I. Opening of the high-level segment

150. The high-level segment of the Twenty-First Meeting of the Parties began at 10.25 a.m. on Saturday, 7 November, with an opening ceremony facilitated by Mr. Nick Nuttall, UNEP spokesperson and Head of Media, who acted as master of ceremonies.

151. Opening statements were delivered by Mr. Róbert Tóth, President of the Bureau of the Twentieth Meeting of the Parties to the Montreal Protocol; the Executive Secretary, speaking on behalf of the Executive Director of UNEP; and Mr. George.

152. In his opening statement, Mr. Tóth welcomed the significant work undertaken to implement the decisions taken at the Twentieth Meeting of the Parties and the paperless meeting initiative piloted at that meeting, which had become another milestone in the history of the ozone treaties. He called for the initiative to spread throughout the United Nations system. He highlighted the fact that the Vienna Convention and its Montreal Protocol had attained universal ratification, commending Governments and the Ozone Secretariat alike on their efforts in achieving that feat. He stressed the importance of synergies between all stakeholders and expressed the hope that progress would be made in deciding on the important issue of the phase-out of HFCs.

153. The Executive Director, in his opening statement, welcomed the milestone of universal ratification and pointed out that another landmark would be achieved on 1 January 2010 with the complete phase-out of CFCs, events testament to the success of the ozone institutions and the flexibility of the treaties. He praised cooperative efforts under the ozone treaties with the International Plant Protection Convention and the United Nations Framework Convention on Climate Change to deal with such issues as methyl bromide and climate change. He noted that there was a proposal on the table to share responsibility for HFCs between the Convention on Climate Change and the Montreal Protocol and called upon representatives to accord that proposal due consideration.

154. The Parties at the current meeting, he said, could send a strong and clear political signal that the United Nations, by harnessing the power of various legal instruments, could tackle the global environmental challenges facing the current generation. Every individual bore a responsibility to develop a more sustainable planet and multilateralism was the only possible solution to environmental challenges. It was alive and well, however, as could be seen in the efforts to protect the ozone layer, foster development and combat climate change. He lamented what he said was a recent lowering of expectations of serious results from the Copenhagen climate negotiations, and he called on representatives to lead the current meeting to a positive outcome that would raise ambition levels in the efforts to preserve the environment.

155. In his opening statement, Mr. George welcomed the participants to Egypt and formally opened the high-level segment, lauding the universal ratification of the ozone treaties. He stressed Egypt's contribution to efforts to protect the ozone layer and combat climate change, outlining its work at the national level in that regard, and called for international cooperation, observing that environmental threats paid no heed to borders. Warning of the deleterious effects of climate change that could afflict developing countries in particular, he appealed for strong commitment in Copenhagen and coordination and cooperation at all levels to combat climate change, lest future generations inherit a tarnished legacy.

156. Following the opening statements, the representatives enjoyed a cultural interlude, during which an Egyptian harpist performed a composition by Franz Schubert.

157. Subsequently, a documentary was screened on the environmental protection activities of Ms. Susan Mubarak, First Lady of Egypt. Following that screening, the Executive Secretary presented an award to Mr. George, on behalf of Ms. Mubarak, in recognition of Ms. Mubarak's contribution to the environment.

158. The Executive Secretary then recounted the history of the Vienna Convention and its Montreal Protocol, drawing attention to the events that had led to the treaties achieving universal ratification. In celebration of the achievement he presented commemorative certificates to the representatives of Mexico and Timor-Leste, as the first and last Parties to ratify the ozone treaties, and announced that similar certificates would be sent to all 196 Parties in recognition of their efforts. He expressed thanks to all Parties for their achievements to date and in anticipation of many more milestones along the road to a low-carbon, resource-efficient green economy of the twenty-first century.

II. Organizational matters

A. Election of officers for the Twenty-First Meeting of the Parties

159. At the opening session of the high-level segment, in accordance with paragraph 1 of rule 21 of the rules of procedure, the following officers were elected, by acclamation, to the Bureau of the Twenty-First Meeting of the Parties to the Montreal Protocol:

President:	Mr. Michael Church (Grenada)	Latin American and Caribbean group
Vice-Presidents:	Mr. Patrick McInerney (Australia)	Western European and others group
	Mr. Abid Ali (Pakistan)	Asian and Pacific group
	Mr. Ramadhan Kajembe (Kenya)	African group
Rapporteur:	Ms. Azra Rogovic-Grubic (Bosnia and Herzegovina)	Eastern European group

B. Adoption of the agenda of the high-level segment of the Twenty-First Meeting of the Parties

160. The following agenda for the high-level segment was adopted on the basis of the provisional agenda contained in document UNEP/OzL.Pro.21/1:

1. Opening of the high-level segment:
 - (a) Statements by representative(s) of the Government of Egypt;
 - (b) Statements by representative(s) of the United Nations;
 - (c) Statement by the President of the Twentieth Meeting of the Parties.
2. Organizational matters:
 - (a) Election of officers for the Twenty-First Meeting of the Parties;
 - (b) Adoption of the agenda of the Twenty-First Meeting of the Parties;
 - (c) Organization of work;
 - (d) Credentials of representatives.
3. Status of ratification of the Vienna Convention, the Montreal Protocol and the amendments to the Montreal Protocol.
4. Presentation by the assessment panels on the status of their work, with a focus on the latest developments.
5. Presentation by the Chair of the Executive Committee of the Multilateral Fund on the work of the Executive Committee, the Multilateral Fund Secretariat and the Fund's implementing agencies.
6. Statements by heads of delegations.
7. Report by the Co-Chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Twenty-First Meeting of the Parties.
8. Dates and venue for the Twenty-Second Meeting of the Parties.
9. Other matters.
10. Adoption of decisions by the Twenty-First Meeting of the Parties.
11. Adoption of the report of the Twenty-First Meeting of the Parties.
12. Closure of the meeting.

C. Organization of work

161. The Parties agreed to follow their customary procedures.

D. Credentials of representatives

162. The Bureau of the Twenty-First Meeting of the Parties to the Montreal Protocol approved the credentials of the representatives of 96 of the 149 Parties represented. The Bureau provisionally approved the participation of other Parties on the understanding that they would forward their credentials to the Secretariat as soon as possible. The Bureau urged all Parties attending future meetings of the Parties to make their best efforts to submit credentials to the Secretariat as required under rule 18 of the rules of procedure. The Bureau also recalled that under the rules of procedure credentials had to be issued either by a head of State or Government or by a minister for foreign affairs or, in the case of a regional economic integration organization, by the competent authority of that organization. The Bureau further recalled that representatives of Parties not presenting credentials in the correct form could be precluded from full participation in the meetings of the Parties, including the right to vote.

III. Status of ratification of the Vienna Convention, the Montreal Protocol and the amendments to the Montreal Protocol

163. Introducing the item, the President presented a brief summary of the information contained in document UNEP/OzL.Pro.21/INF/1-UNEP/OzL.Pro/ImpCom/43/INF/1 on the status of ratification, acceptance or approval of or accession to the agreements on the protection of the stratospheric ozone layer. He noted that since the Twentieth Meeting of the Parties three additional Parties had ratified the Vienna Convention and the Montreal Protocol, bringing the total for both instruments to 196 and achieving universal ratification. As to the amendments to the Protocol, four Parties had ratified the London Amendment, for a total of 193; six had ratified the Copenhagen Amendment, for a total of 190; 11 had ratified the Montreal Amendment, for a total of 178; and 16 had ratified the Beijing Amendment, for a total of 160.

164. The President drew attention to the draft decision on the status of ratification of the Vienna Convention, the Montreal Protocol and the amendments to the Montreal Protocol contained in document UNEP/OzL.Pro.21/3, which was a standard decision of the kind that had been taken in the past to record the status of ratifications and to encourage further ratifications.

IV. Presentation by the assessment panels on the status of their work with a focus on the latest developments

165. Under the item presentations were made by representatives of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel.

A. Scientific Assessment Panel

166. Mr. Paul Newman, co-chair of the Scientific Assessment Panel, presented the Panel's plans for the development of its 2010 scientific assessment of ozone depletion. He explained the context of the assessment, noting that it was based upon the expertise of the authors and reviewers; that it was a scientific document with a focus on ozone depletion and implications for policy decisions; and that it was an assessment of science and not a scientific review. The assessment would look at key issues and responses to specific issues by the Parties. In particular, it would review levels and trends of ozone-depleting substances and related chemicals, among other things. It was well along in its development: the author teams had been formed, the outline established and the first draft completed. Over the course of 2010, the draft would undergo numerous reviews and revisions, before being completed in July 2010 and being delivered as a pre-print volume to UNEP by 30 December.

B. Environmental Effects Assessment Panel

167. Ms. Janet Bornman, co-chair of the Environmental Effects Assessment Panel, reported on the effects of ozone depletion and its interactions with climate change with regard to ozone and ultraviolet radiation reaching Earth; human health; terrestrial and aquatic ecosystems; biogeochemical cycles; air quality; and materials damage. Noting that the Panel produced a full assessment report every four years, and annual scientific updates in the form of short progress reports, she outlined key issues discussed in the Panel's 2009 progress report.

Ozone and ultraviolet radiation reaching Earth

168. The continuing reduction in stratospheric ozone, she said, might be influenced by factors such as the impact of ozone changes on other climate variables and vice versa. Thus, a return to ozone values for any particular date might not be attributable to the effects of ozone-depleting-substance reduction alone. Large differences in surface ultraviolet irradiance between polluted and pristine locations occurred because of differences in clouds and aerosols, differences in the profile of ozone and the influence of interactions between ozone aerosols in the lower atmosphere. A recent modelling study had shown that in response to climate change cloud cover was projected to increase at high latitudes, but decrease at low latitudes, resulting in a further ultraviolet burden in the latter regions, with important implications for human health. The success of the Montreal Protocol had been assessed in scenarios for the “world avoided”, showing that reductions in stratospheric ozone due to increasing CFCs would have led to more than a doubling of the UV index in the northern summer mid-latitudes by 2060.

Human health

169. The key human health issues included effects on skin cancer and the role of ultraviolet radiation induced production of vitamin D in the skin. Cutaneous melanoma continued to be a major environmental risk, with rising mortality rates, especially for fair-skinned populations. While low exposure to sunlight might be beneficial for preventing skin damage, however, it might also be detrimental to the maintenance of vitamin D levels. Possible links between sun exposure and reduced risk of breast, colon and prostate cancer were still uncertain but evidence was increasing that ultraviolet-radiation-induced vitamin D production had positive effects with regard to several autoimmune diseases such as multiple sclerosis and type 1 diabetes mellitus.

Terrestrial ecosystems

170. She said that ozone depletion and its interactions with climate change had consequences for several ecosystems, including polar ecosystems. Reports indicated that the adaptive capacity of some species in polar regions had diminished as a result of decades of ozone depletion, with type B ultraviolet radiation having a greater impact in the Antarctic than in the Arctic.

171. Significant progress in the understanding of molecular mechanisms controlling plant responses to type B ultraviolet radiation had been made using an array of biotechnological tools for enhancing the tolerance of sensitive plants to such radiation. With regard to adaptation, type-B-ultraviolet-radiation-induced pigments (phenolics) could reduce the susceptibility of plants to leaf pathogens and insect attack. Those pigments also showed promise as indicators for ozone column history before modern measurements were possible because of the correlation between pigment accumulation and the level of solar ultraviolet radiation.

Aquatic ecosystems

172. The key issues identified in respect of aquatic ecosystems were effects from changes in climate together with increased exposure to type B ultraviolet radiation. Examples included increasing carbon dioxide concentrations and the resultant acidification of oceans, which caused a reduction in the calcification of several organisms that were efficient absorbers of ultraviolet radiation. While rapid warming (5–6 °C) of surface waters around the Antarctic peninsula over the past 50 years had resulted in potentially higher phytoplankton productivity that could contribute to increasing carbon sequestration, global warming had increased the stratification of surface oceanic waters, leading to greater penetration of solar ultraviolet radiation and thus a potential decrease in carbon fixation and protective calcification.

Biogeochemical cycles

173. She highlighted the main issues arising from recent studies, which centred on the cycling of compounds driven by ultraviolet radiation, temperature, land-use changes, ozone, wind and carbon dioxide upwelling from oceans resulting in a weakened carbon sink, especially for the Southern Ocean. It had also been suggested that current models of sinks and sources of carbon dioxide should include ultraviolet radiation-induced effects, which would improve climate predictions.

174. The projected warmer and drier conditions in terrestrial ecosystems would be likely to lead to more open vegetation that would be more exposed to type B ultraviolet radiation, with consequences including greater photodegradation of plant litter. Climate change might also affect halocarbon budgets from terrestrial systems through warming and decreasing soil moisture and changing the sinks and sources of methyl chloride and methyl bromide, among other things. Processes induced by type B ultraviolet radiation led to the formation of biologically available metals such as mercury in the aquatic

food web (as methylmercury). Type B ultraviolet radiation also caused pesticide degradation, the products of which might also be toxic.

Tropospheric ozone

175. Climate-driven effects on ozone and the consequences of substitutes for ozone-depleting substances were among the key issues of importance for tropospheric ozone as total tropospheric ozone was projected to increase. Climate modelling scenarios suggested a significant increase between 1965 and 2095 of the global ozone flux from stratosphere to troposphere, which would have complex impacts on climate processes. Substitutes for ozone-depleting fumigants such as sulphuryl fluoride, a proposed substitute for methyl bromide in the fumigation of crops and soils, might also contribute to global climate change. Nitrous oxide emissions from agriculture were projected to continue to increase.

176. An assessment of trifluoroacetic acid, a breakdown product of HCFCs and HFCs, had revealed no new evidence to suggest that it would have adverse effects on humans or the environment, given the small projected deposition of the substance in oceans.

Materials damage

177. The contribution of climatic variables, including increased high temperatures, humidity, atmospheric pollutants and ultraviolet radiation, to damage to materials such as plastics and wood was partially offset by the protection afforded by photostabilizers, which allowed service lifetimes of materials to be maintained or improved.

C. Technology and Economic Assessment Panel

178. Mr. Andersen presented information on the Technology and Economic Assessment Panel's 2010 assessment process. He noted that the Panel had six technical options committees dealing with chemicals; foams; halons; medical applications; methyl bromide; and refrigeration, air-conditioning and heat pumps. He explained that the Panel and each of its six committees reported annually on progress in phasing out the use and emissions of ozone-depleting substances in their sectors and responded to specific requests by Parties. The Panel also regularly established task forces to deal with specific requests and all of the committees dealt with essential and critical use nominations. The committees held one or two meetings each year, while the Panel met for one week as well as at the annual meetings of the Open-ended Working Group and the Meeting of the Parties. Each committee, except the Methyl Bromide Technical Options Committee, had 11 members from Parties operating under paragraph 1 of Article 5 of the Protocol and 10–15 members from Parties not so operating. The Methyl Bromide Technical Options Committee had 38 members. The Panel and the committees had 57 members from Parties operating under paragraph 1 of Article 5 of the Protocol and 88 members from Parties not operating under that paragraph, for a total of 145 members.

179. Mr. Kuijpers continued the Technology and Economic Assessment Panel's presentation. Noting that the three Montreal Protocol panels produced assessment reports every four years, he said that his Panel's next such report would be published by the end of 2010. Each of the Panel's technical options committees produced its own assessment report, while the Panel produced an overall assessment report that included the executive summaries of the committee reports along with overview and special topic chapters, including on organizational and cross-cutting issues. He noted that the Panel's workload peaked in the years in which it produced its assessment reports. Reports by the technical options committees analysing specific issues and reports by Panel task forces, requested with 4–6 month deadlines by the Parties, had first priority, followed by the Panel's progress reports, which contained the Panel's responses to essential- and critical-use requests. The assessment reports of the Panel and the committees had their own cycles: the assessment reports took between one and two years while the committee reports typically went through two or three drafts before finalization. Peer review comments on the 2010 reports would be received in the fourth quarter of 2010 and the final reports would be ready around the end of December 2010. A synthesis report with policy options was subsequently prepared from the findings in the three Panel reports.

180. Mr. Andersen and Mr. Kuijpers then summarized the contents of the six technical options committee assessment reports that were being prepared. The Chemicals Technical Options Committee report would include process agent issues, laboratory and analytical uses of ozone-depleting substances, n-propyl bromide and a discussion of carbon tetrachloride emissions and opportunities for their reduction. The Foams Technical Options Committee report would include the conversion to non-ozone-depleting substances for insulating foams and integral skin foams, scenarios up to 2020 covering all technical options, data on banks, emissions and destruction, and three appendices on sectors by market segment, blowing agents and technical options. The Halons Technical Options Committee

report would include a description of halon banks in Parties operating under paragraph 1 of Article 5, global supplies and distribution of halons and HFCs (particularly where HFCs and halons were the only viable options), emerging halon replacement technologies and progress and plans in the adoption of alternatives in civil aviation.

181. They continued with a description of the three remaining technical options committee assessment reports. The Medical Technical Options Committee report would include a description of available technologies for metered-dose inhalers, the transition away from CFC-based metered-dose inhalers, the production of pharmaceutical-grade CFCs and the remaining challenges in the effort to phase out CFCs in metered-dose inhalers. It would describe the transition away from CFCs for medical aerosols other than those in metered-dose inhalers, available sterilant technologies, the global status of the transition to non-ozone-depleting sterilants and the global use of HCFCs and issues affecting their phase-out. The Methyl Bromide Technical Options Committee report would feature various case studies and would discuss new developments, including the commercial adoption of alternatives and remaining barriers to their adoption, the 2015 phase-out in Parties operating under paragraph 1 of Article 5, new research, pesticide registration, training and licensing, continuing and emerging pest problems and quarantine. The Refrigeration, Air-conditioning and Heat Pumps Technical Options Committee assessment report would review the use of HCFCs, HFCs and non-fluorocarbons and the transition away from HCFCs and HFCs in all subsectors. It would elaborate on the technical and economic feasibility of low-global-warming potential natural refrigerants (hydrocarbons, carbon dioxide and ammonia) and low-global-warming potential HFCs, would provide banks and emissions data until 2020 and elaborate on the energy efficiency of all types of equipment. It would also contain an annex with all relevant refrigerant property data.

182. The Parties took note of the information presented.

V. Presentation by the Chair of the Executive Committee of the Multilateral Fund on the work of the Executive Committee, the Multilateral Fund Secretariat and the Fund's implementing agencies

183. Mr. Husamuddin Ahmadzai, chair of the Executive Committee of the Multilateral Fund, delivered a presentation on the Committee's activities in 2009, summarizing the report contained in document UNEP/OzL.Pro.21/6. The Committee had approved 222 new projects and activities aimed at achieving the phase-out of 3,979 ODP-tonnes of production and consumption of CFCs and other controlled ozone-depleting substances. Analysis of countries' potential to meet their obligations showed that most Parties operating under paragraph 1 of Article 5 would be able to complete the phase-out of CFCs by 2010, a major achievement for the international community.

184. With a view to accelerating the phase-out of HCFCs, the Committee had approved 238 project preparation requests for phase-out and HCFC alternatives demonstration projects for 128 countries, contributing funds totalling more than \$26.4 million. It had approved 82 of those over the reporting period, with total funding of more than \$6.8 million. HCFC costing guidelines had been under deliberation since 2007, raising concerns that some Parties operating under paragraph 1 of Article 5 might not be able to comply with their 2013 and 2015 deadlines.

185. The Committee had also considered the technical and policy aspects of climate, energy and further environmental impacts. The climate impact indicators developed by the Fund secretariat would be discussed further at the Committee's fifty-ninth meeting because some members of the Committee felt that a simpler guide to assessing the global climate impact of HCFC alternative technologies was needed.

186. The Committee had been pursuing innovative ideas, notably a special facility for raising additional income, as discussed in the Committee's report to the Twentieth Meeting of the Parties. The facility might cover any additional costs of maximizing the benefits of phasing out HCFCs and of destruction projects. The Committee's business planning for 2009–2011 had included demonstration projects for the destruction of ozone-depleting substances, requests for which would be evaluated against criteria adopted at the Committee's fifty-eighth meeting.

187. Speaking on behalf of the implementing agencies, the chair observed that during 2009 UNDP had striven to accelerate project implementation. With programmes in more than 100 countries, UNDP had helped, through the Multilateral Fund, to phase out over 64,500 tonnes of ozone-depleting substances. Plans for phasing out HCFCs had progressed in all 31 countries where UNDP was the lead agency, and it had taken steps to implement pilot or validation projects for low-carbon options to

replace HCFCs, particularly in the foams sector. UNDP and its Carbon Finance Unit had pooled their knowledge on combining and sequencing financing to enable developing countries to take account of climate benefits in HCFC phase-out.

188. The UNEP core mandate included targeting compliance assistance mainly in low-volume-consuming countries. Its nine regional networks provided policy support for 147 developing countries, about 90 per cent of which had established compliance policies, including import and export licensing systems. UNEP was also assisting more than 80 countries to prepare HCFC phase-out management plans and was continuing its network activities on technology transfer and the prevention of illegal trade in ozone-depleting substances.

189. The United Nations Industrial Development Organization (UNIDO) had helped 36 Parties operating under paragraph 1 of Article 5 to complete their plans to phase out CFCs in 2010. It was currently working with 39 countries on the preparation of HCFC phase-out management plans and had submitted the first completed plan for consideration by the Executive Committee. UNIDO was also actively involved in promoting new non-depleting technologies that offered both ozone layer and climate benefits, and was well positioned to deliver assistance to Parties operating under paragraph 1 of Article 5 because of its in-house technical expertise.

190. The World Bank, through close work with its client countries on country-driven phase-out plans, had helped to eliminate over 280,000 ODP-tonnes of production and consumption of ozone-depleting substances by the end of 2008. It had also demonstrated potential climate and ozone synergies through chiller replacement projects, using Multilateral Fund money to leverage other financing. The Bank, on behalf of the Multilateral Fund, had recently studied the voluntary carbon market as a possibility for private-sector financing for the management and destruction of ozone-depleting substances contained in banks. It was also considering "advanced commitments" as a potential addition to the Multilateral Fund while accelerating HCFC phase-out and reducing carbon emissions.

191. There remained a number of challenges for the Executive Committee to tackle in the future. By the end of May 2009, \$80 million of the pledged total contributions of \$133 million for 2009 had yet to be paid. He therefore appealed for timely payment of all contributions to avoid jeopardizing the final and crucial stage of CFC phase-out in Parties operating under paragraph 1 of Article 5 and to maintain the momentum of HCFC phase-out.

192. In conclusion, the chair expressed his belief that the Montreal Protocol was one of the most successful international environmental agreements and that the Multilateral Fund was an integral part of its success. The Montreal Protocol community could feel proud of its efforts to phase out ozone-depleting substances, which had contributed not only to the recovery of the ozone layer but also to the reduction of greenhouse gases. All participants needed to continue and reinforce that success by attending to the phase-out of HCFCs.

193. The Parties took note of the information presented.

VI. Statements by heads of delegations

194. At the high-level segment, statements were made by heads of delegation of the following Parties, listed in the order in which they spoke: Islamic Republic of Iran, Dominican Republic, Cuba, Iraq, Fiji (on behalf of itself, Cook Islands and Tonga), India, Canada, China, Sweden (on behalf of the European Union), Timor-Leste, Burkina Faso, Pakistan, Malaysia, United States, Saudi Arabia, Kuwait, Croatia, Angola, Uganda, Bangladesh, Madagascar, Serbia, Malawi, Mozambique, Yemen, Zimbabwe, Andorra, Indonesia, Federated States of Micronesia, Tajikistan, Philippines, Marshall Islands, Solomon Islands, Kiribati, Japan, Kenya, Sudan, Somalia, Tonga, Nicaragua, Brazil, Mongolia, South Africa, Grenada, Mexico, Ghana.

195. Representatives of the Secretariat of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the International Institute of Refrigeration also made statements.

196. All who spoke expressed their appreciation to the Government and people of Egypt for their hospitality in hosting the current meeting. Many thanked UNEP and the Ozone Secretariat, the Multilateral Fund secretariat and implementing agencies, donor countries, the assessment panels, international organizations and other stakeholders for their roles in ensuring the success of the meeting and the successful development and implementation of the Protocol.

197. Many representatives highlighted the important successes of the Protocol, praising it as an exemplary achievement in international cooperation that, in addition to protecting the ozone layer, had also helped to mitigate climate change. Many celebrated the fact that with Timor-Leste's recent ratification the Montreal Protocol had become the first global environmental treaty to achieve universal ratification.

198. Many representatives outlined the status of their countries' ratification of the ozone treaties and their efforts to fulfil their obligations under the Protocol. The latter included the phase-out of the production and consumption of controlled substances, which in a notable number of cases had been or would be achieved ahead of the deadlines under the Protocol; the promotion of alternative substances and technologies, including climate-friendly technologies; training, capacity-building and awareness raising activities; and the enhancement of cooperation among government ministries, public and private stakeholders, the countries of the various regions and international organizations.

199. Many representatives said that while there was much to celebrate there remained much to do. Parties therefore needed to maintain momentum to ensure that the Protocol dealt effectively with the remaining challenges, including the phase-out of CFCs and several other ozone-depleting substances in 2010; the management of essential-use exemptions; the reduction of methyl bromide use for quarantine and pre-shipment; the management and destruction of banks of ozone-depleting substances; limiting the exemption for laboratory and analytical uses of ozone-depleting substances; combating illegal trade in ozone-depleting substances, which was likely to increase following the 2010 phase-outs; ensuring the provision of appropriate and effective assistance to countries operating under paragraph 1 of Article 5; and implementing the accelerated phase-out of HCFCs.

200. Regarding HCFCs, many representatives from Parties operating under paragraph 1 of Article 5 said that implementing the accelerated phase-out schedule would require developed country Parties to fulfil their obligations to provide appropriate financial and technical assistance, capacity-building and technology transfer. Many called upon the Executive Committee to complete the development of necessary criteria against which to consider and approve projects to phase out HCFCs. Several stressed the need to provide financial and technical support to those industries that had already converted from CFCs to HCFCs and were being asked to undertake a second conversion to other climate- and- friendly technologies. One emphasized that funding for capital and incremental costs should be provided for facilities that had completed the conversion from CFCs to HCFCs prior to the agreement to accelerate the HCFC phase-out. A number of representatives called for more analyses and information on HCFC alternatives, emphasizing the need for economically, technically and environmentally viable alternatives for use in developing countries. A number of representatives requested that the Executive Committee take into account the special economic, geographic and post-conflict circumstances of their countries when discussing budget allocations for the preparation and implementation of their HCFC management phase-out plans.

201. Many representatives, in particular from small island developing States, highlighted the growing threats associated with climate change. Many supported taking steps under the Protocol to begin addressing HFCs, noting that their expanding use was due almost entirely to the Protocol's controls on CFCs and HCFCs and that doing so would yield very important climate benefits. Using the proven mechanisms of the Protocol would allow the Parties to work synergistically with the Convention on Climate Change on a matter of significant common concern. A number of other representatives, however, said that the Parties should not address HFCs, arguing, among other things, that addressing HFCs was beyond the intended scope of the Protocol; that it was important not to infringe upon or impede the Climate Change Convention, which already encompassed HFCs; that time, effort and resources would be better spent ensuring the success of the CFC and HCFC phase-outs; that HFCs were required to achieve the HCFC phase-out; and that proven, cost-effective, and environmentally safe alternatives to HFCs were not available in all sectors.

202. Many representatives agreed that ensuring the environmentally sound management and destruction of the growing amount of ozone-depleting-substance wastes, including those contained in banks, would yield important benefits in the effort to protect the ozone layer and mitigate climate change. A number of representatives of developing countries said that they were hampered in their ability to deal with banks of ozone-depleting substances owing to a lack of the necessary equipment and financial resources; they therefore called for assistance from the Multilateral Fund. Representatives also voiced support for a variety of other steps, including further study of the size and scope of banks and how to monitor and manage them; identifying priorities; creating effective incentives for the sound management and destruction of ozone-depleting substances in banks; sharing existing knowledge; regional cooperation; capacity-building; institutional strengthening; and seeking additional resources for dealing with banks of non-traditional sources. Several representatives from countries with the

technologies and other capacities required for effective management and destruction offered assistance to developing countries eager to grapple with ozone-depleting-substance banks in their countries.

203. Many representatives, from both developed and developing countries, said that financial and technical assistance and the effective functioning of the Multilateral Fund had played a major role in the success of the Protocol. Many said too that it was important for developed country Parties to fulfil their obligations to provide appropriate technical assistance; adequate financial assistance through the Multilateral Fund to meet the agreed incremental costs of developing country Parties in their transition away from ozone depleting substances; and technology transfer as provided for in the Protocol. Many representatives said that institutional strengthening had played an important role in building the capacity of developing countries to implement the Protocol. They called for continued funding for institutional strengthening in 2010 and beyond, saying that it was essential to, among other things, achieving the accelerated phase-out of HCFCs, eliminating consumption of methyl bromide, including for quarantine and pre-shipment applications, addressing issues associated with banks of obsolete ozone-depleting substances and combating illegal trade. In that context one representative suggested that institutional strengthening be extended to 2030. Another favoured decoupling institutional strengthening from HCFCs in discussions within the Executive Committee.

204. There was general support for taking steps to reduce the amount of methyl bromide used in quarantine and pre-shipment applications, with many representatives saying that effective, economically viable and environmentally friendly alternatives existed. Some cautioned, however, that such alternatives were not yet available for all uses and that they would have to be universally available before the exemption for quarantine and pre-shipment applications could be completely eliminated.

205. Several representatives outlined difficulties in reducing the use of CFCs in metered-dose inhalers, citing what they said were important public-health benefits of ensuring the viability of providing low-cost, easily available options for patients and doctors. They stressed that efforts to develop effective, low-cost alternatives for all applications continued in their countries but said that in the meantime they would need to rely on the essential-use exemption process for some period following the 2010 phase-out of CFCs. One representative called for additional funding to address the issue.

206. Representatives from Pacific island States expressed support for the establishment of an ozone-depleting-substance analytical laboratory and destruction facility in their region. A number of representatives highlighted the special challenges faced by very-low-volume-consuming countries. Several said that the climatic conditions of countries should be taken into account in the consideration of additional control measures. One representative said that his country would seek an adjustment to its calculated baseline of HCFC consumption. Another representative highlighted the difficulties for developing countries posed by mislabelled imported ozone-depleting substances and called for the establishment of regional destruction centres to enable their environmentally sound disposal.

207. The representative of the Secretariat of the Basel Convention, noting that one of the major challenges under discussion was the environmentally sound management and destruction of CFCs stockpiled and contained in banks, stressed the importance of regulating the transboundary movement of wastes. Drawing attention to the synergies between the Basel Convention and the Montreal Protocol with regard to wastes, he highlighted recent relevant work by the Parties and the Secretariat to the Basel Convention and expressed an interest in continuing to work with the Parties to the Montreal Protocol.

208. The representative of the International Institute of Refrigeration, an intergovernmental organization, noted that while providing critical benefits many of the substances used in the past for refrigeration were ozone-depleting substances and greenhouse gases. With demand for refrigeration expected to grow, in particular in developing nations, the Institute had developed a number of recommendations on how to tackle such challenges, including coordination between the Montreal and Kyoto protocols, improved design and maintenance of refrigeration equipment, continued development of alternative solutions, which were increasingly available, and eliminating incentives for projects that used substances with high global-warming potential.

VII. Report by the Co-Chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Twenty-First Meeting of the Parties

209. Reporting on the preparatory segment of the meetings, the Co-Chair said that much had been achieved during the preparatory segment through negotiations that were difficult but marked throughout by cooperation and compromise. He thanked the Parties for their great efforts, the contact group chairs

for their leadership, the Secretariat for its excellent work and professionalism and the interpreters and other behind-the-scenes staff for making it possible for the Parties to do their work.

VIII. Dates and venue for the Twenty-Second Meeting of the Parties

210. The Parties adopted a decision by which they agreed that the Twenty-Second Meeting of the Parties would take place at the seat of the Secretariat in Nairobi in October 2010 unless other appropriate arrangements were made by the Secretariat in consultation with the Bureau.

211. Subsequently, the representative of Uganda announced that his Government wished to host the Twenty-Second meeting of the Parties. The Parties applauded the generous offer by the Government of Uganda and it was noted that the Secretariat would discuss the matter further with the Party.

IX. Other matters – declaration on high-global-warming-potential alternatives to ozone-depleting substances

212. Expressing regret that the Parties at the current meeting had not adopted a decision on HFCs, the representative of the Federated States of Micronesia introduced a declaration on high-global-warming potential alternatives to ozone-depleting substances, which, he reported, had been signed by 38 Parties. The representative of Mauritius then read the declaration. The representatives of Japan and New Zealand requested that their countries be added to the list of Parties sponsoring the declaration. The representatives of Australia and the European Community expressed general support for the terms of the declaration but said that they could not sign on to it at the current meeting given the short time available to consider it.

213. The Parties took note of the declaration and, at the request of its submitters, agreed that it should be appended as an annex to the present report. The President noted that the presentation of the declaration did not constitute its endorsement by the Meeting of the Parties. The declaration, which is presented as submitted and has not been edited by the Secretariat, is set out in annex III to the present report.

X. Adoption of decisions by the Twenty-First Meeting of the Parties

214. The present chapter sets out the decisions adopted by the Twenty-First Meeting of the Parties. They are presented as adopted and have not been edited by the Secretariat.

The Meeting of the Parties decides:

XXI/1: Status of ratification of the Vienna Convention, the Montreal Protocol and the London, Copenhagen, Montreal and Beijing amendments to the Montreal Protocol

1. To note with satisfaction that 196 Parties have ratified the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer, representing universal ratification, and also a higher number of Parties than any other treaties in history;

2. To note that, as of 31 October 2009, 193 Parties had ratified the London Amendment to the Montreal Protocol, 190 Parties had ratified the Copenhagen Amendment to the Montreal Protocol, 178 Parties had ratified the Montreal Amendment to the Montreal Protocol and 160 Parties had ratified the Beijing Amendment to the Montreal Protocol;

3. To urge all States that have not yet done so to ratify, approve or accede to the amendments to the Montreal Protocol, taking into account that universal participation is necessary to ensure the protection of the ozone layer;

XXI/2: Environmentally sound management of banks of ozone-depleting substances

Recalling Decision XX/7 which called for further study on the size and scope of banks of ozone-depleting substances and requesting the Multilateral Fund to initiate pilot projects on destruction with a view to developing practical data and experience,

Understanding that any such projects approved under the Multilateral Fund would be implemented consistent with national laws and international agreements related to wastes,

Noting the significant climate change and ozone layer benefits associated with destroying many types of ozone-depleting substances;

1. *To request* the Ozone Secretariat to host a one-day seminar on the margins of the 30th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol on the topic of how to identify and mobilize funds, including funds additional to those being provided under the Multilateral Fund, for ozone-depleting substance destruction, and *further requests* the Ozone Secretariat to invite the Multilateral Fund and the Global Environment Facility to consider co-coordinating this effort, and to invite other relevant institutions to attend the seminar;

2. *To request* the Executive Committee to continue its consideration of further pilot projects in Article 5 Parties pursuant to decision XX/7, and in that context, to consider the costs of a one-time window within its current destruction activities to address the export and environmentally sound disposal of assembled banks of ozone-depleting substances in low-volume-consuming countries that are not usable in the Party of origin;

3. *To request* the Technology and Economic Assessment Panel to review those destruction technologies identified in its 2002 report as having a high potential, and any other technologies, and to report back to the 30th Meeting of the Open-Ended Working Group on these technologies and their commercial and technical availability;

4. *To agree* that the Executive Committee of the Multilateral Fund should develop and implement, as expeditiously as possible, a methodology to verify the climate benefits and costs associated with Multilateral Fund projects to destroy banks of ozone-depleting substances, and should make such information publicly available on a project-level basis;

5. *To request* the Executive Committee to continue its deliberations on a special facility and to report on these deliberations, including possible options for such a facility as appropriate, to the 30th Meeting of the Open-Ended Working Group as an agenda item.

6. *To call upon* Parties, and institutions not traditionally contributing to the financial mechanism, to consider making additional support available to the Multilateral Fund for destruction of ozone-depleting substances, if they are in a position to do so;

7. *To request* the Executive Committee to report annually on the results of destruction projects to the Meeting of the Parties, and to request the Technology and Economic Assessment Panel, based on this, and other available information, to suggest to the thirty-first meeting of the Open-Ended Working Group components designed to help Parties of diverse size and with diverse wastes to develop national and/or regional strategic approaches to address the environmentally sound disposal of the banks of ozone-depleting substances that are present in their countries and/or regions. In addition, this information should be available to the Technology and Economic Assessment Panel and the Parties to inform the consideration of the financial implications for the Multilateral Fund and other funding sources of addressing the destruction of ozone-depleting-substance banks;

XXI/3: Uses of controlled substances as process agents

Noting with appreciation the 2008 report of the Technology and Economic Assessment Panel;

Recalling Decision X/14 in which all Parties are asked to report to the Secretariat annually by 30 September on their use of controlled substances as process agents, the levels of emissions from those uses and the containment technologies used by them to minimize emissions of controlled substances;

Noting that the report by Executive Committee on process agent uses in Parties operating under paragraph 1 of Article 5 of the Montreal Protocol (UNEP/Oz.L.Pro.WG.1/29/4) found that the adoption of technology that results in zero emissions of ozone-depleting substances used as process agents has become the norm in Parties operating under paragraph 1 of Article 5 of the Montreal Protocol;

Noting that reporting by Parties operating under paragraph 1 of Article 5 on approved process agent projects under the Multilateral Fund does not replace the need to submit the required information under Decision X/14 to the Ozone Secretariat;

Noting with concern that only two Parties reported information consistent with Decision X/14 and that such limited data has impeded the Technology and Economic Assessment Panel in undertaking the level of analysis required;

Also noting that such limited information reported by Parties puts at risk the current exclusion of process agent uses of controlled substances from a Party's annual consumption calculation;

1. To request all Parties with process agent uses of controlled substances to submit the information required by Decision X/14 by 30 September each year to the Ozone Secretariat;
2. To clarify that the annual reporting obligation shall not apply once a Party informs the Ozone Secretariat they do not use ozone-depleting substances as process agents as under Decision X/14, until they start doing so, and that this one-time procedure pertains to all Parties whether or not they are listed in Table B of Decision X/14;
3. To request the Ozone Secretariat every year to write to those Parties that did not submit a document as under paragraph 2, report, requesting them to submit information consistent with Decision X/14;
4. To request the Ozone Secretariat to bring cases of non-reporting to the attention of the Implementation Committee for consideration;
5. To request the Technology and Economic Assessment Panel and the Executive Committee of the Multilateral Fund to prepare a joint report for future meetings, reporting on progress with phasing out process-agent applications, as sought by Decision XVII/6 (paragraph 6);
6. To revisit this issue at the 30th Meeting of the Open Ended Working Group;
7. To update Table A of Decision X/14 as per the Annex to this decision;
8. To update Table B of Decision X/14 as per the Annex to this decision;

Annex

Table A: List of uses of controlled substances as process agents

No.	Process agent application	Substance
1	Elimination of NCl_3 in chlor-alkali production	CTC
2	Chlorine recovery by tail gas absorption in chlor-alkali production	CTC
3	Production of chlorinated rubber	CTC
4	Production of endosulfan	CTC
5	Production of ibuprofen	CTC
6	Production of chlorosulfonated polyolefin (CSM)	CTC
7	Production of aramid polymer (PPTA)	CTC
8	Production of synthetic fibre sheet	CFC-11
9	Production of chlorinated paraffin	CTC
10	Photochemical synthesis of perfluoropolyetherpolyperoxide precursors of Z-perfluoropolyethers and difunctional derivatives	CFC-12
11	Reduction of perfluoropolyetherpolyperoxide intermediate for production of perfluoropolyether diesters	CFC-113
12	Preparation of perfluoropolyether diols with high functionality	CFC-113
13	Production of cyclodime	CTC
14	Production of chlorinated polypropene	CTC
15	Production of chlorinated ethylene vinyl acetate (CEVA)	CTC
16	Production of methyl isocyanate derivatives	CTC
17	Production of 3-phenoxybenzaldehyde	CTC
18	Production of 2-chloro-5-methylpyridine	CTC
19	Production of imidacloprid	CTC
20	Production of bupropfenin	CTC
21	Production of oxadiazon	CTC
22	Production of chloradized N-methylaniline	CTC
23	Production of 1,3-dichlorobenzothiazole	CTC
24	Bromination of a styrenic polymer	BCM
25	Synthesis of 2,4-D (2,4- dichlorophenoxyacetic acid)	CTC
26	Synthesis of di-(2-ethylhexyl) peroxydicarbonate (DEHPC)	CTC
27	Production of radio-labelled cyanocobalamin	CTC
28	Production of high modulus polyethylene fibre	CFC-113
29	Production of vinyl chloride monomer	CTC
30	Production of sultamicillin	BCM
31	Production of prallethrin (pesticide)	CTC

No.	Process agent application	Substance
32	Production of o-nitrobenzaldehyde (for dyes)	CTC
33	Production of 3-methyl-2-thiophenecarboxaldehyde	CTC
34	Production of 2-thiophenecarboxaldehyde	CTC
35	Production of 2-thiophene ethanol	CTC
36	Production of 3,5-dinitrobenzoyl chloride (3,5-DNBC)	CTC
37	Production of 1,2-benzisothiazol-3-ketone	CTC
38	Production of m-nitrobenzaldehyde	CTC
39	Production of tichlopidine	CTC
40	Production of p-nitro benzyl alcohol	CTC
41	Production of tolclofos methyl	CTC
42	Production of polyvinylidene fluoride (PVdF)	CTC
43	Production of tetrafluorobenzoylethyl acetate	CTC
44	Production of 4-bromophenol	CTC

Table B: Limits for process agent uses (all figures are in metric tonnes per year)

Party	Make-up or consumption	Maximum emissions
European Community	1083	17
United States of America	2300	181
Canada	0	0
Japan	0	0
Russian Federation	800	17
Australia	0	0
New Zealand	0	0
Norway	0	0
Iceland	0	0
Switzerland	5	0.4
TOTAL	4188	215.4

XXI/4: Essential-use nominations for controlled substances for 2010

The Twenty-first Meeting of the Parties decides:

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Medical Technical Options Committee,

Mindful that, according to decision IV/25, the use of chlorofluorocarbons for metered-dose inhalers does not qualify as an essential use if technically and economically feasible alternatives or substitutes are available that are acceptable from the standpoint of environment and health,

Noting the Technology and Economic Assessment Panel's conclusion that technically satisfactory alternatives to chlorofluorocarbon-based metered-dose inhalers are available for some of the therapeutic formulations for treating asthma and chronic obstructive pulmonary disease,

Taking into account the Technology and Economic Assessment Panel's analysis and recommendations for essential use exemptions for controlled substances for the manufacture of metered-dose inhalers used for asthma and chronic obstructive pulmonary disease,

Noting that the Meeting of the Parties is for the first time considering essential use nominations submitted by Parties operating under paragraph 1 of Article 5,

Noting also that the Medical Technical Options Committee stated in its report that it had difficulty assessing some of the nominations submitted by Parties in accordance with the criteria of decision IV/25 and subsequent relevant decisions owing to a lack of certain information,

Noting further that notwithstanding insufficient information referred to in the preceding paragraph the Medical Technical Options Committee gave due consideration to the health and safety of patients in regard to the amounts recommended,

Welcoming the continued progress in several Parties operating under paragraph 1 of Article 5 in reducing their reliance on chlorofluorocarbon based metered-dose inhalers as alternatives are developed, receive regulatory approval and are marketed for sale,

1. To authorize the levels of production and consumption for 2010 necessary to satisfy essential uses of chlorofluorocarbons for metered-dose inhalers for asthma and chronic obstructive pulmonary disease as specified in the annex to the present decision;
2. To request nominating Parties to supply to the Medical Technical Options Committee information to enable assessment of essential use nominations in accordance with the criteria set out in decision IV/25 and subsequent relevant decisions as set out in the Handbook on Essential Use Nominations;
3. To encourage Parties with essential use exemptions in 2010 to consider sourcing required pharmaceutical-grade chlorofluorocarbons initially from stockpiles where they are available and accessible;
4. To encourage Parties with stockpiles of pharmaceutical-grade chlorofluorocarbons potentially available for export to Parties with essential use exemptions in 2010 to notify the Ozone Secretariat of such quantities and a contact point by 31 December 2009;
5. To request the Secretariat to post on its website details of the potentially available stocks referred to in the preceding paragraph;
6. To request the Executive Committee to consider at its next meeting reviewing both of the chlorofluorocarbon production phase-out agreements with China and India with a view to allowing production of pharmaceutical-grade chlorofluorocarbons to meet the authorized levels of production and consumption specified in the annex to the present decision and any authorized amounts in the future years;
7. That the Parties listed in the annex to the present decision shall have full flexibility in sourcing the quantity of pharmaceutical-grade chlorofluorocarbons to the extent required for manufacturing of metered-dose inhalers, as authorized in paragraph 1 above, either from imports or from domestic producers or from existing stockpiles;
8. To request the Technology and Economic Assessment Panel and its Medical Technical Options Committee to organize and undertake a mission of experts to examine the technical, economic and administrative issues affecting the transition from CFC metered dose inhalers to CFC-free alternatives in the Russian Federation, and to report the results of this mission to the Meeting of the thirtieth Open-Ended Working Group. The Technology and Economic Assessment Panel is requested to examine:
 - a. The status of transition in the enterprises manufacturing CFC MDIs;
 - b. Technical, financial, logistical, administrative or other barriers to transition;
 - c. Possible options to overcome any barriers and facilitate the transition.

Annex

Essential-use authorizations for 2010 of chlorofluorocarbons for metered-dose inhalers

Party	2010
Argentina	178
Bangladesh	156.7
China	972.2
Egypt	227.4
India	343.6
Iran (Islamic Republic of)	105
Pakistan	34.9
Russian Federation	212
Syrian Arab Republic	44.68

Decision XXI/5: Essential-use exemption for chlorofluorocarbon-113 for aerospace applications in the Russian Federation

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Chemicals Technical Options Committee,

Taking into consideration that adequate identified alternatives for chlorofluorocarbon-113 (CFC-113) do not currently exist for use in the aerospace industry of the Russian Federation and that the search for its alternatives continues, as confirmed in the 2006 assessment report of the Technology and Economic Assessment Panel and its Chemicals Technical Options Committee and in informal meetings with experts from the Russian Federation,

Noting that the Russian Federation continues to explore the possibility of importing CFC-113 for its aerospace industry needs from available global stocks in accordance with the recommendations of the Technology and Economic Assessment Panel and its Chemicals Technical Options Committee,

Noting that the Russian Federation is successful in reducing use and emissions on the timetable of technical transformation developed in collaboration with the Chemical Technical Options Committee,

1. To authorize the levels of production and consumption of CFC-113 in the Russian Federation for essential-use exemptions for chlorofluorocarbons in its aerospace industry in the amount of 120 metric tonnes in 2010;
2. To request the Russian Federation to explore further the possibility of importing CFC-113 for its aerospace industry needs from available global stocks in accordance with the recommendations of the Technology and Economic Assessment Panel and its Chemicals Technical Options Committee.
3. To encourage the Russian Federation to continue its efforts to explore alternatives and substitutes and to use best practices to minimize emissions.

XXI/6: Global laboratory use exemption

Noting the reports the Technology and Economic Assessment Panel (TEAP) provided under Decision XVII/10 and under Decision XIX/18 on laboratory and analytical uses of ozone depleting substances (ODS).

Noting that TEAP has identified in its report a number of procedures for which alternatives to the use of ODS are available, as summarised below:

- (a) Analyses in which the ODS is used as a solvent for spectroscopic measurements:
 - (i) of hydrocarbons (oil and grease) in water or soil
 - (ii) of simethicone (polydimethylsiloxane)
 - (iii) when recording infrared and nuclear magnetic resonance spectra, including hydroxyl index
- (b) Analyses in which the ODS is used as a solvent for electrochemical methods of analysis of:
 - (i) cyanocobalamin
 - (ii) bromine index
- (c) Analyses involving selective solubility in the ODS of:
 - (i) cascarosides
 - (ii) thyroid extracts
 - (iii) polymers
- (d) Analyses in which the ODS is used to preconcentrate the analyte, for:
 - (i) liquid chromatography (HPLC) of drugs and pesticides
 - (ii) gas chromatography of organic chemicals such as steroids
 - (iii) adsorption chromatography of organic chemicals
- (e) Titration of iodine with thiosulfate (iodometric analyses) for determination of:
 - (i) iodine
 - (ii) copper

- (iii) arsenic
- (iv) sulphur
- (f) Iodine and bromine index measurements (titrations)
- (g) Miscellaneous analyses, namely
 - (i) stiffness of leather
 - (ii) jellification point
 - (iii) specific weight of cement
 - (iv) gas mask cartridge breakthrough
- (h) Use of ODS as a solvent in organic chemical reactions
 - (i) O- and N-difluoromethylation
- (i) General use as laboratory solvent, namely
 - (i) washing of NMR tubes
 - (ii) removal of greases from glassware

Recalling Decisions VII/11, XI/15, XVIII/15 and XIX/18 that already eliminated the following uses from the global exemption for laboratory and analytical uses:

- (a) Refrigeration and air conditioning equipment used in laboratories, including refrigerated laboratory equipment such as ultra-centrifuges;
- (b) Cleaning, reworking, repair, or rebuilding of electronic components or assemblies;
- (c) Preservation of publications and archives;
- (d) Sterilization of materials in a laboratory;
- (e) Testing of oil, grease and total petroleum hydrocarbons in water;
- (f) Testing of tar in road-paving materials;
- (g) Forensic finger-printing;
- (h) All laboratory and analytical uses of methyl bromide except:
 - (i) As a reference or standard:
 - To calibrate equipment which uses methyl bromide;
 - To monitor methyl bromide emission levels;
 - To determine methyl bromide residue levels in goods, plants and commodities;
 - (ii) In laboratory toxicological studies;
 - (iii) To compare the efficacy of methyl bromide and its alternatives inside a laboratory;
 - (iv) As a laboratory agent which is destroyed in a chemical reaction in the manner of feedstock;
- (i) Testing of organic matter in coal

Recalling the conditions applied to the exemption for laboratory and analytical uses contained in the Annex II of the report of the Sixth Meeting of the Parties.

1. to extend the applicability of the global laboratory and analytical use exemption also to countries operating under Article 5(1) from 1 January 2010 until 31 December 2010 for all ODS except those in Annex B Group III, Annex C Group I and Annex E.

2. to extend the global laboratory and analytical use exemption beyond 31 December 2010 until 31 December 2014:

- (a) for Parties operating under Article 5(1) for all ODS except those in Annex B Group III, Annex C Group I and Annex E, and
- (b) for Parties not operating under Article 5(1) for all ODS except those in Annex C Group I

3. to request all Parties to urge their national standards-setting organisations to identify and review those standards which mandate the use of ODS in laboratory and analytical procedures with a view to adopting, where possible, ODS-free laboratory and analytical products and processes;

4. to request the Ozone Secretariat to enter into discussion with the International Organization for Standardization (ISO), ASTM International (ASTM), the European Committee for Standardization (CEN) as well as with other relevant multinational standardisation organisations encouraging them to identify methods based on ODS and to expedite the inclusion of non-ODS alternative methods, techniques and substances in their standard methods;

5. to request the TEAP and its Chemicals Technical Options Committee to complete the report as requested under Decision XIX/18 and to provide for the 30th Open Ended Working Group

(a) a list of laboratory and analytical uses of ODS, including those uses where no alternatives exist.

(b) to identify the international and national standards that require the use of ODS and to indicate the corresponding alternative standard methods not mandating the use of ODS.

(c) to consider the technical and economical availability of those alternatives in Article-5 and non-Article-5 parties as well as to ensure that the alternative methods show similar or better statistical properties (for example accuracy or detection limits).

6. to request TEAP while continuing its work as described in paragraph 5, to evaluate the availability of alternatives for those uses already banned under the global exemption in Parties operating under Article 5(1), considering technical and economical aspects. By the 30th meeting of the Open Ended Working Group TEAP should present its findings and recommendations whether exemptions would be required for parties operating under paragraph 1 of Article 5 for any of the uses already banned.

7. to allow Parties operating under paragraph 1 of Article 5 until 31 December 2010 to deviate from the existing laboratory and analytical use bans in individual cases, where a party considers that this is justified, and to ask Parties to revisit this issue at the 22nd Meeting of the Parties.

8. to request the Ozone Secretariat to update the list of laboratory and analytical uses that the Parties have agreed should no longer be eligible under the global exemption, as required by Decision X/19 and to write to Parties reporting laboratory and analytical uses of ozone depleting substances encouraging them to transition to non-ozone depleting alternatives, where allowed by their national standards.

9. to request Parties to continue to investigate domestically the possibility of replacing ODS in those laboratory and analytical uses listed in the report by the TEAP and to make this information available to the Ozone Secretariat by 30 April 2010.

10. To encourage UNEP to invite representatives of the Chemicals Technical Options Committee to regional network meetings to raise awareness of ODS alternatives for laboratory and analytical uses where problems have been specifically identified by members of that network. Where considered necessary other representatives from competent authorities of Parties could be invited to participate in the meeting.

XXI/7: Halons

Recognizing that the International Civil Aviation Organization (ICAO) General Assembly adopted a resolution A36-12 at its 36th Session encouraging ICAO to continue collaboration with the Technical and Economic Assessment Panel (TEAP) and its Halon Technical Options Committee (HTOC) and requesting its Secretary General to consider mandates to be effective: (1) in the 2011 timeframe, for the replacement of halon in lavatories, hand held extinguishers, engines and auxiliary power units in newly designed aircraft; (2) in the 2011 timeframe, for the replacement of halons in lavatories in new production aircraft; and (3) in the 2014 timeframe, for the replacement of halons in hand held extinguishers for new production aircraft;

Recalling that Parties must ensure that the movement of halon is consistent with their obligations under Article 4B and international agreements on waste;

Noting that the 2009 report by the Halon Technical Options Committee observed that legislative barriers preventing the free flow of recycled halon among Parties could result in halon not being available to meet future critical needs, including those of the aviation industry.

1. To express the Parties' continued support for the implementation of mandatory dates by when halon alternatives will be used in previously agreed upon applications of newly designed aircraft;
2. To request TEAP and its HTOC to continue to engage ICAO on this issue and to report progress on this issue to the twenty second Meeting of the Parties;
3. To encourage Parties that have implemented import and/or export restrictions of recovered, recycled or reclaimed halons to consider reassessing their situation with a view towards removing barriers on the import and export of recovered, recycled or reclaimed halons to allow, wherever possible, their free movement between Parties to enable Parties to meet current and future needs, even as Parties continue to transition to available halon alternatives;
4. To encourage Parties to refrain from destroying uncontaminated recovered, recycled, or reclaimed halons before they have considered their domestic, as well as the global long-term future needs for halons, and to consider retaining uncontaminated recovered, recycled, reclaimed halons for anticipated future needs in a manner that employs best practices for storage and maintenance, in order to minimize emissions;
5. To encourage Parties to report their assessments of current and long-term future needs for halons to the Ozone Secretariat for use by the TEAP and its HTOC in their future assessments of management of halon banks.
6. To continue to encourage Parties to inform, on a regular basis, their users of halons, including the maritime industries, the aviation sector and the military, of the need to prepare for reduced access to halons in the future and to take all actions necessary to reduce their reliance on halons.

Decision XXI/8: Sources of Carbon Tetrachloride Emissions and Opportunities for Reductions of ODS Emissions

Recalling Decision XVII/10 on sources of carbon tetrachloride (CTC) emissions and opportunities for reduction, and the difficulties expressed by Technology and Economic Assessment Panel (TEAP) in reconciling reported emissions data and atmospheric concentrations,

Reiterating the concern regarding the large discrepancy between reported emissions and observed atmospheric concentrations, which suggests that emissions from industrial activity are significantly under reported and underestimated, or that atmospheric measurements of CTC emissions need to be reconciled.

Acknowledging that CTC can be emitted from processes, stockpiles or containers in the form of vapour or released from the same sources in liquid or solid waste stream(s) and via products, all of which would also be considered as emissions

Mindful of the obligations to ensure compliance with control measures under Article 2D of the Montreal Protocol regarding production and consumption of carbon tetrachloride,

Desiring to reduce emissions to background concentration levels,

Noting the report UNEP/OzL.Pro/ExCom/58/50 of the 58th Executive Committee on emission reductions and phase-out of carbon tetrachloride in light of decision XVIII/10 of the Eighteenth Meeting of the Parties and its verbal report to the Twentieth Meeting of the Parties concluding that the rapid decrease in model-estimated bottom-up emissions (i.e. based on information from industry and Article 7 data) is significantly lower than emissions derived from atmospheric measurements for the range of scientifically determined atmospheric lifetimes.

1. To encourage Parties having any carbon tetrachloride and other chloromethane production and/or consumption of CTC in pharmaceutical manufacturing processes to review their national data on CTC production, consumption and where possible estimated emissions and to provide any new data to the TEAP via the Ozone Secretariat by September 2010;
2. For the purpose of clarification the reference to "emissions" in paragraph 1 means any release from processes, stockpiles, products, and waste streams, either in the form of vapour or in the form of liquid;
3. To request the TEAP, in its next assessment report in 2011, to investigate chemical alternatives to ODS in exempted feedstock uses and investigate alternatives, including not-in-kind alternatives, to products made with such process agents and feedstocks and provide assessment of the technical and economic feasibility of reducing or eliminating such use and emissions;

4. To request TEAP and the Scientific Assessment Panel (SAP) to review the ozone depletion potential and atmospheric lifetime of CTC with a view to possibly reconciling the large discrepancy between emissions reported and those inferred from atmospheric measurements and to report their findings in the next quadrennial review;

5. To request the TEAP and SAP to coordinate their relevant findings, taking into account the information received in relation to paragraphs 1, 3 and 4, and report in time for the thirty first meeting of the Open-ended Working Group for the consideration of the Twenty third Meeting of the Parties in 2011;

6. To encourage all parties to provide support for atmospheric research in the measurement of emissions of CTC with a particular focus on regions in which there is a need for improved data;

XXI/9: Hydrochlorofluorocarbons and environmentally sound alternatives

Noting that the transition from, and phase-out of, ozone-depleting substances has implications for climate system protection;

Recalling that decision XIX/6 requests the Parties to accelerate the phase-out of production and consumption of hydrochlorofluorocarbons (HCFCs);

Mindful of the need to safeguard the climate change benefits associated with phase-out of HCFCs;

Aware of the increasing availability of low-Global warming potential (GWP) alternatives to HCFCs, in particular in the refrigeration, air-conditioning and foam sectors;

Aware also of the need to appropriately ensure the safe implementation and use of low-GWP technologies and products;

Recalling para 9 and 11 (b) of decision XIX/6;

1. To request the Technology and Economic Assessment Panel (TEAP), in its May 2010 Progress Report and subsequently in its 2010 full assessment, to provide the latest technical and economic assessment of available and emerging alternatives and substitutes to HCFCs; and the Scientific Assessment Panel (SAP) in its 2010 assessment to assess, using a comprehensive methodology, the impact of alternatives to HCFCs on the environment, including on the climate; and both the SAP and the TEAP to integrate the findings in their assessments into a synthesis report;

2. To request the Technology and Economic Assessment Panel in its 2010 progress report:

(a) To list all sub-sectors using HCFCs, with concrete examples of technologies where low-GWP alternatives are used, indicating what substances are used, conditions of application, their costs, relative energy efficiency of the applications and, to the extent possible, available markets and percentage share in those markets and collecting concrete information from various sources including information voluntarily provided by Parties and industries. To further ask TEAP to compare these alternatives with other existing technologies, in particular, high-GWP technologies that are in use in the same sectors;

(b) To identify and characterize the implemented measures for ensuring safe application of low-GWP alternative technologies and products as well as barriers to their phase-in, in the different sub-sectors, collecting concrete information from various sources including information voluntarily provided by Parties and industries;

(c) To provide a categorization and reorganization of the information previously provided in accordance with decision XX/8 as appropriate, updated to the extent practical, to inform the Parties of the uses for which low- or no-GWP and/or other suitable technologies are or will soon be commercialized, including to the extent possible the predicted amount of high-GWP alternatives to ozone-depleting substances uses that can potentially be replaced;

3. To request the Ozone Secretariat to provide the UNFCCC Secretariat with the report of the workshop on high global-warming-potential alternatives for ozone-depleting substances;

4. To encourage Parties to promote policies and measures aimed at avoiding the selection of high-GWP alternatives to HCFCs and other ozone-depleting substances in those applications where other market-available, proven and sustainable alternatives exist that minimise impacts on the

environment, including on climate, as well as meeting other health, safety and economic considerations in accordance with decision XIX/6;

5. To encourage Parties to promote the further development and availability of low-GWP alternatives to HCFCs and other ozone-depleting substances that minimise environmental impacts particularly for those specific applications where such alternatives are not presently available and applicable;

6. To request the Executive Committee as a matter of urgency to expedite the finalisation of its guidelines on HCFCs in accordance with Decision XIX/6;

7. To request the Executive Committee, when developing and applying funding criteria for projects and programmes regarding in particular the phase-out of HCFCs:

(a) to take into consideration paragraph 11 of decision XIX/6;

(b) to consider providing additional funding and/or incentives for additional climate benefits where appropriate;

(c) to take into account, when considering the cost-effectiveness of projects and programmes, the need for climate benefits; and

(d) to consider in accordance with decision XIX/6, further demonstrating the effectiveness of low-GWP alternatives to HCFCs, including in Air Conditioning and refrigeration sectors in high ambient temperature areas in Article 5 countries and to consider demonstration and pilot projects in Air conditioning and refrigeration sectors which apply environmentally sound alternatives to HCFCs;

8. To encourage Parties to consider reviewing and amending as appropriate, policies and standards which constitute barriers to or limit the use and application of products with low- or zero-GWP alternatives to ozone-depleting substances, particularly when phasing out HCFCs.

XXI/10: Quarantine and pre-shipment uses of methyl bromide

Recognizing that methyl bromide use for quarantine and pre-shipment purposes is identified in the 2006 assessment report of the Scientific Assessment Panel as a remaining uncontrolled use of ozone-depleting substances of which the emissions may delay recovery of the ozone layer.

Mindful of the Scientific Assessment report scenarios which calculated that the integrated total chlorine and bromine in the atmosphere from 2007 to 2050 (equivalent effective stratospheric chlorine, EESC) would be reduced by 3.2% if all quarantine and pre-shipment emissions were eliminated by 2015.

Mindful that the use of methyl bromide for quarantine and pre-shipment purposes is still increasing in some regions.

Acknowledging the efforts made by Parties to phase out or reduce the use and emissions of methyl bromide for quarantine and pre-shipment purposes.

Noting that 22 Non-Article 5 Parties and 54 Article 5 Parties have reported current quarantine and pre-shipment consumption, that 31 other Parties which used quarantine and pre-shipment in the past have reduced their quarantine and pre-shipment consumption to zero, and that 14 additional Parties will cease next year and that a further 27 Parties are scheduled to cease consumption by 1 January 2010;

Noting that the Technology and Economic Assessment Panel's Task Force¹ concluded that there are technically feasible alternatives which may replace a large proportion of the quarantine and pre-shipment uses of methyl bromide, especially in sawn timber, wood packaging material (ISPM 15), grains and similar foodstuffs, pre-plant soils use and logs;

Aware that, particularly for compliance with ISPM 15, there are more than 6,000 certified heat treatment facilities deployed in many countries, and that not-in-kind alternatives (such as plastic pallets or cardboard pallets) are available worldwide, including in many Article 5 countries, and do not require any treatment under ISPM 15; also noting that the ISPM 15 standard encourages national plant protection organisations (NPPOs) to promote the use of alternative treatments approved in that standard.

Further noting that under the International Plant Protection Convention alternative treatments are currently under review.

¹ Table 9-1 (p.138) of the QPS Task Force report of October 2009

Noting the importance of monitoring quarantine and pre-shipment uses of methyl bromide and their reporting under Article 7 in order to assess the contribution of quarantine and pre-shipment uses to methyl bromide emissions into the atmosphere.

Aware that several Parties have succeeded in reducing quarantine and pre-shipment consumption by adopting policy measures such as promoting the adoption of alternatives, reviewing regulatory requirements, allowing alternative options, adopting 'polluter pays' taxes on methyl bromide imports, and/or limiting quarantine and pre-shipment consumption;

Noting that methyl bromide use and emissions can also be reduced by technical improvements in fumigation practices, such as using gas-tight structures, determining minimum effective methyl bromide doses, monitoring during fumigation to minimise re-dosing, using recovery equipment, and treating wood packing materials prior to loading containers rather than treating entire loaded containers;

1. *To remind* Parties of their obligations to report annual data on the consumption of methyl bromide for quarantine and pre-shipment under Article 7 and to establish and implement a system for licensing trade in methyl bromide, including quarantine and pre-shipment, under Article 4B;

2. *To invite* Parties to collect data on quarantine and pre-shipment according to Decision XI/13, and to consider using the format provided in the Technology and Economic Assessment Panel's report of April 1999;

3. *To request* the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee, in consultation with other relevant experts and the IPPC Secretariat to provide a report to be considered by the 30th meeting of the Open-Ended Working Group covering the following:

(1) A review of available information on the technical and economical feasibility of alternatives, and the estimated availability, for the following categories of quarantine and pre-shipment uses:

- a. sawn timber and wood packaging material (ISPM 15);
- b. grains and similar foodstuffs;
- c. pre-plant soils use;
- d. logs;

(2) The current availability and market penetration rate of quarantine and pre-shipment alternatives to the uses listed in paragraph 3(1) above, and their relation with regulatory requirements and other drivers for the implementation of alternatives;

(3) An update of table 9.1 of the 2009 Task Force report to include economic aspects, and to take account of the information compiled under this paragraph, distinguishing between Article 5 and non Article 5 parties and between quarantine and pre-shipment uses separately;

(4) A description of a draft methodology, including assumptions, limitations, objective parameters, the variations within and between countries and how to take account of them, that the Technology and Economic Assessment Panel would use, if requested by the Parties, for the assessment of the technical and economical feasibility of alternatives, of the impact of their implementation and of the impacts of restricting the quantities of methyl bromide production and consumption for quarantine and pre-shipment uses;

4. *To encourage* Parties to apply best-practice measures to reduce methyl bromide quarantine and pre-shipment use and emissions, that may include the review of required use dosages, gas tightness controls, monitoring during fumigation and other measures to minimize methyl bromide dosages, and, in applications where alternatives are not yet available, the recovery and possible reuse of methyl bromide, and to review the methyl bromide quarantine and pre-shipment requirements for possibilities of introducing alternative mitigation measures whenever possible;

5. *To encourage* Parties to consider adopting, where possible within their national policy framework, incentives to promote the transition to alternatives such as deposit/rebate schemes or other financial measures;

6. *To encourage* Parties or regions to use the October 2009 Technology and Economic Assessment Panel quarantine and pre-shipment task force report to develop documents that summarise information on technical options to reduce emissions, and on adopted technologies that have replaced

methyl bromide quarantine and pre-shipment applications, the reductions achieved, the investments needed, the operating costs, and the funding strategies;

7. *To encourage* Parties to implement the recommendations of the third meeting of the Commission of the Phytosanitary Measures under the IPPC, also referred to in Decision XX/6;

XXI/11: Critical-use exemptions for methyl bromide for 2010 and 2011

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee,

Recognizing the significant reductions made in critical use nominations in many Parties,

Recalling paragraph 10 of decision XVII/9,

1. To permit, for the agreed critical-use categories for 2010 set forth in table A of the annex to the present decision for each Party, subject to the conditions set forth in the present decision and decision Ex.I/4 to the extent that those conditions are applicable, the levels of production and consumption for 2010 set forth in table B of the annex to the present decision which are necessary to satisfy critical uses, in addition to the amounts permitted in decision XX/5;

2. To permit, for the agreed critical-use categories for 2011 set forth in table C of the annex to the present decision for each Party, subject to the conditions set forth in the present decision and in decision Ex.I/4 to the extent that those conditions are applicable, the levels of production and consumption for 2011 set forth in table D of the annex to the present decision which are necessary to satisfy critical uses, with the understanding that additional levels of production and consumption and categories of uses may be approved by the Meeting of the Parties in accordance with decision IX/6;

3. That Parties shall endeavour to license, permit, authorize or allocate quantities of critical-use methyl bromide as listed in tables A and C of the annex to the present decision;

4. To recognize the continued contribution of the Methyl Bromide Technical Options Committee's expertise and to agree that, in accordance with section 4.1 of the Technology and Economic Assessment Panel's terms of reference, the Committee should ensure that it develops its recommendations in a consensus process that includes full discussion among all available members of the Committee and should ensure that members with relevant expertise are involved in developing its recommendations;

5. To request the Technology and Economic Assessment Panel to ensure that the critical use recommendations reported in its annual progress report clearly set out the reasons for recommendations and that, where requests are received from Parties for further information, the Methyl Bromide Technical Options Committee should provide a response within four weeks of the submission of such a request;

6. That each Party which has an agreed critical use exemption renews its commitment to ensure that the criteria in paragraph 1 of decision IX/6 are applied when licensing, permitting or authorizing critical use of methyl bromide and, in particular, the criterion laid down in paragraph 1 (b) (ii) of decision IX/6. Each Party is requested to report on the implementation of the present paragraph to the Ozone Secretariat by 1 February for the years to which the present decision applies.

7. To request all Parties that have nominated a critical use exemption to report data on stocks using the accounting framework agreed at the 16th Meeting of the Parties and to urge Parties that have not yet provided such a report to submit the accounting framework prior to the 22nd Meeting of the Parties.

8. When submitting nominations, Parties are requested to submit updates of the reports requested in the decisions on critical uses including the following:

- i. National Management Strategy under decision Ex.I/4(3), if there are significant changes
- ii. Methyl bromide alternative database under decision Ex.I/4(2)
- iii. Information to enable the Methyl Bromide Technical Options Committee to report on the amount of critical use categories licensed, permitted, authorised or the amount used

9. The Methyl Bromide Technical Options Committee is requested to summarise in the table on its recommendations for each nomination information on adherence with each criterion set out in decision IX/6(1)(a)(ii) and (b)(i) and (b)(iii) and other relevant decisions of the Parties.

Table A. 2010 agreed critical use categories (metric tonnes)

Canada	Pasta (3.529)
Israel	Broomrape protected (12.50), cucumber (15.937), cut flowers & bulbs protected (63.464), cut flowers open field (28.554), dates (1.04), melon protected & open field (70.00), strawberry fruit – Sharon and Gaza (57.063), strawberry runners – Sharon and Gaza (22.320), sweet potatoes (20.000)
United States of America	Strawberry runners (2.018)

Table B. 2010 permitted levels of production and consumption (metric tonnes)

Canada	3.529
Israel	290.878
United States of America	2.018*

* *Minus available stocks*

Table C. 2011 agreed critical use categories (metric tonnes)

Australia	Strawberry runners (23.840), Rice (4.87)
Canada	Mills (14.107), strawberry runners (Prince Edward Island) (5.261)
Japan	Chestnuts (5.35), cucumbers (27.621), ginger - field (47.450), ginger – protected (7.036), melons (73.548), pepper - green and hot (65.691), watermelon (13.050)
United States of America	Commodities (5.0), NPMA food processing structures (17.365), mills and processors (135.299), dried cured pork (3.73), cucurbits (195.698), eggplant – field (19.725), forest nursery seedlings (93.547), nursery stock – fruit, nut, flower (7.955), orchard replant (183.232) ornamentals (64.307), peppers – field (206.234), strawberries – field (812.709), strawberry runners (6.036), tomatoes – field (292.751), sweet potato slips (11.612)

Table D. 2011 permitted levels of production and consumption (metric tonnes)

Australia	28.710
Canada	19.368
Japan	239.746
United States of America	1855.2*

* *Minus available stocks*

XXI/12: Report on the establishment of licensing systems under Article 4B of the Montreal Protocol

Noting that paragraph 3 of Article 4B of the Montreal Protocol requires each Party, within three months of the date of introducing its system for licensing the import and export of new, used, recycled and reclaimed controlled substances in Annexes A, B, C and E of the Protocol, to report to the Secretariat on the establishment and operation of that system,

Noting with appreciation that 174 out of the 178 Parties to the Montreal Amendment to the Protocol have established import and export licensing systems for ozone-depleting substances as required under the terms of the amendment,

Noting also with appreciation that 12 Parties to the Protocol that have not yet ratified the Montreal Amendment have also established import and export licensing systems for ozone-depleting substances,

Recognizing that licensing systems provide for the monitoring of imports and exports of ozone-depleting substances, prevent illegal trade and enable data collection,

1. To encourage all remaining Parties to the Protocol that have not yet ratified the Montreal Amendment to ratify it and to establish import and export licensing systems for ozone-depleting substances if they have not yet done so;
2. To urge all Parties that already operate licensing systems for ozone-depleting substances to ensure that they are structured in accordance with Article 4B of the Protocol and that they are implemented and enforced effectively;
3. To review periodically the status of the establishment of import and export licensing systems for ozone-depleting substances by all Parties to the Protocol, as called for in Article 4B of the Protocol;

XXI/13: Endorsement of the new co-chair of the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee of the Technology and Economic Assessment Panel

To endorse the selection of Mr. Roberto Peixoto (Brazil) as the new Co-Chair of the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee;

XXI/14: Data and information provided by the Parties in accordance with Article 7 of the Montreal Protocol

Noting with appreciation that 188 Parties out of the 193 that should have reported data for 2008 have done so and that 64 of those Parties reported their data by 30 June 2009 in accordance with decision XV/15,

Noting with concern, however, that the following Parties have still not reported 2008 data: Angola, Democratic People's Republic of Korea, Malta, Nauru, United Arab Emirates,

Noting that their failure to report their 2008 data in accordance with Article 7 places those Parties in non-compliance with their data-reporting obligations under the Montreal Protocol until such time as the Secretariat receives their outstanding data,

Noting also that a lack of timely data reporting by Parties impedes the effective monitoring and assessment of Parties' compliance with their obligations under the Montreal Protocol,

Noting further that reporting by 30 June each year greatly facilitates the work of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol in assisting Parties operating under paragraph 1 of Article 5 of the Protocol to comply with the Protocol's control measures,

1. To urge the Parties listed in the present decision, where appropriate, to work closely with the implementing agencies to report the required data to the Secretariat as a matter of urgency;
2. To request the Implementation Committee to review the situation of those Parties at its next meeting;

3. To encourage Parties to continue to report consumption and production data as soon as figures are available, and preferably by 30 June each year, as agreed in decision XV/15;

XXI/15: Reporting of methyl bromide for quarantine and pre-shipment use

Noting that quarantine and pre-shipment applications are currently not controlled under the Montreal Protocol,

Noting also that some Parties may not be reporting data fully on these applications,

Noting further the difficulty of assessing non-compliance with the reporting obligations for quarantine and pre-shipment applications of methyl bromide owing to the current procedure for processing data reported under Article 7 of the Montreal Protocol,

To urge Parties that have not reported data on quarantine and pre-shipment applications for previous years to do so expeditiously and to urge all Parties to report such data annually as required under paragraph 3 of Article 7 of the Montreal Protocol;

XXI/16: Membership of the Implementation Committee

1. To note with appreciation the work done by the Implementation Committee under the Non-compliance Procedure for the Montreal Protocol in 2009;

2. To confirm the positions of Armenia, Germany, Nicaragua, the Niger and Sri Lanka as members of the Committee for one further year and to select Egypt, Jordan, St. Lucia, Russian Federation and United States of America as members of the Committee for a two-year period beginning 1 January 2010;

3. To note the selection of Mr. Ezzat Lewis (Egypt) to serve as President and of Ms. Elisabeth Munzart (Germany) to serve as Vice-President and Rapporteur of the Committee for one year beginning on 1 January 2010;

XXI/17: Non-compliance in 2007 and 2008 with the provisions of the Protocol governing consumption of the controlled substances in Annex A, group I (chlorofluorocarbons), by Bangladesh

Noting that Bangladesh ratified the Montreal Protocol on 2 August 1990, the London Amendment on 18 March 1994, the Copenhagen Amendment on 27 November 2000 and the Montreal Amendment on 27 July 2001, and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved \$6,339,765 from the Multilateral Fund to enable Bangladesh's compliance in accordance with Article 10 of the Protocol,

1. That Bangladesh reported annual consumption for the controlled substances in Annex A, group I (chlorofluorocarbons), of 154.9 ODP-tonnes for 2007 and 158.3 ODP-tonnes for 2008, which exceeds the Party's maximum allowable consumption of 87.2 ODP-tonnes for those controlled substances for those years, and that the Party is therefore in non-compliance with the control measures for those substances under the Protocol for those years;

2. To note with appreciation Bangladesh's submission of a plan of action to ensure its prompt return to compliance with the Protocol's chlorofluorocarbon control measures under which, without prejudice to the operation of the financial mechanism of the Protocol, Bangladesh specifically commits itself:

- (a) To reducing chlorofluorocarbon consumption to no greater than:
 - (i) 140 ODP-tonnes in 2009;
 - (ii) Zero ODP-tonnes in 2010, save for essential uses that may be authorized by the Parties;
- (b) To monitoring its system for licensing the import and export of ozone-depleting

substances, including import quotas;

3. To urge Bangladesh to work with the relevant implementing agencies to implement its plan of action to phase out consumption of chlorofluorocarbons;

4. To monitor closely the progress of Bangladesh with regard to the implementation of its plan of action and the phase-out of chlorofluorocarbons. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Bangladesh should continue to receive international assistance to enable it to meet those commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

5. To caution Bangladesh, in accordance with item B of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance, that in the event that it fails to return to compliance the Parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of chlorofluorocarbons that are the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/18: Non-compliance in 2007 and 2008 with the provisions of the Protocol governing consumption of the controlled substances in Annex A, group I (chlorofluorocarbons), by Bosnia and Herzegovina

Noting that Bosnia and Herzegovina ratified the Montreal Protocol on 30 November 1993 and the London, Copenhagen and Montreal Amendments on 11 August 2003 and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved \$3,421,231 from the Multilateral Fund to enable Bosnia and Herzegovina's compliance in accordance with Article 10 of the Protocol,

1. That Bosnia and Herzegovina reported annual consumption for the controlled substances in Annex A, group I (chlorofluorocarbons), of 22.1 ODP-tonnes for 2007 and 8.8 ODP-tonnes for 2008, which exceeds the Party's maximum allowable consumption of 3.6 ODP-tonnes for those controlled substances for those years, and that the Party is therefore in non compliance with the control measures for those substances under the Protocol for those years;

2. To note with appreciation Bosnia and Herzegovina's submission of a plan of action to ensure its prompt return to compliance with the Protocol's chlorofluorocarbon control measures under which, without prejudice to the operation of the financial mechanism of the Protocol, Bosnia and Herzegovina specifically commits itself:

(a) To reducing chlorofluorocarbon consumption to no greater than:

(i) Zero ODP-tonnes in 2009;

(ii) Zero ODP-tonnes in 2010, save for essential uses that may be authorized by the Parties;

(b) To monitoring its system for licensing the import and export of ozone-depleting substances, including import quotas;

3. To urge Bosnia and Herzegovina to work with the relevant implementing agencies to implement its plan of action to phase out consumption of chlorofluorocarbons;

4. To monitor closely the progress of Bosnia and Herzegovina with regard to the implementation of its plan of action and the phase-out of chlorofluorocarbons. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Bosnia and Herzegovina should continue to receive international assistance to enable it to meet those commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

5. To caution Bosnia and Herzegovina in accordance with item B of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance, that, in the event that it fails to return to compliance, the Parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under

Article 4, such as ensuring that the supply of chlorofluorocarbons that are the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/19: Compliance with the Montreal Protocol by the Federated States of Micronesia

1. That the Federated States of Micronesia reported annual consumption of the controlled substances in Annex A, group I (chlorofluorocarbons), of 0.5 ODP-tonnes for 2007, which exceeds the Party's maximum allowable consumption of 0.2 ODP-tonnes for those controlled substances for that year, and that the Party is therefore in non-compliance with the control measures for those substances under the Protocol for that year;

2. To note, however, that in response to the request for an explanation for its excess consumption, the Federated States of Micronesia has reported that it had begun to enforce its licensing system, which took effect in November 2007;

3. To note further the Federated States of Micronesia's return to compliance in 2008 and its commitment to ban imports of chlorofluorocarbons from 2009 onward;

4. To monitor closely the progress of the Party with regard to its implementation of its obligations under the Protocol;

XXI/20: Non-compliance in 2008 with the provisions of the Protocol governing consumption of the controlled substance in Annex B, group II (carbon tetrachloride), by Mexico

Noting that Mexico ratified the Montreal Protocol on 31 March 1988, the London Amendment on 11 October 1991, the Copenhagen Amendment on 16 September 1994, the Montreal Amendment on 28 July 2006 and the Beijing Amendment on 12 September 2007, and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved \$96,073,703 from the Multilateral Fund to enable Mexico's compliance in accordance with Article 10 of the Protocol,

1. That Mexico reported annual consumption for the controlled substances in Annex B, group II (carbon tetrachloride), of 88.0 ODP-tonnes in 2008, an amount inconsistent with its commitment contained in decision XVIII/30 to reduce carbon tetrachloride consumption to no greater than 9.376 ODP-tonnes in that year, and that the Party is therefore in non-compliance with the control measures for that substance under the Protocol for that year;

2. To record with appreciation the submission by Mexico of a plan of action to ensure its prompt return to compliance with the Protocol's carbon tetrachloride consumption control measures under which, without prejudice to the operation of the financial mechanism of the Protocol, Mexico specifically commits itself:

(a) To reducing carbon tetrachloride consumption to no greater than zero ODP-tonnes in 2009 and thereafter;

(b) To monitoring its system for licensing the import and export of ozone-depleting substances, including import quotas;

3. To urge Mexico to work with the relevant implementing agencies to implement its plan of action to phase out consumption of carbon tetrachloride;

4. To monitor closely the progress of Mexico with regard to the implementation of its plan of action and the phase-out of carbon tetrachloride. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Mexico should continue to receive international assistance to enable it to meet those commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

5. To caution Mexico, in accordance with item B of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance, that in the event that it fails to return to compliance the Parties will consider measures consistent with item C of the indicative list of

measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of carbon tetrachloride that is the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/21: Non-compliance in 2007 with the provisions of the Protocol governing consumption of the controlled substances in Annex A, group I (chlorofluorocarbons), by Saudi Arabia and request for a plan of action

Noting that Saudi Arabia ratified the Montreal Protocol, and the London and Copenhagen Amendments on 1 March 1993, and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved \$2,378,485 from the Multilateral Fund to enable Saudi Arabia's compliance in accordance with Article 10 of the Protocol,

1. That Saudi Arabia has reported annual consumption for the controlled substances in Annex A, group I (chlorofluorocarbons), for 2007 of 657.8 ODP-tonnes, which exceeds the Party's maximum allowable consumption of 269.8 ODP-tonnes for those controlled substances for that year, and that the Party is therefore in non compliance with the control measures for those substances under the Protocol for that year;

2. To request Saudi Arabia to submit to the Secretariat, as a matter of urgency and no later than 31 March 2010, for consideration by the Implementation Committee at its next meeting, a plan of action with time-specific benchmarks to ensure the Party's prompt return to compliance;

3. To monitor closely the progress of Saudi Arabia with regard to the phase-out of chlorofluorocarbons. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Saudi Arabia should continue to receive international assistance to enable it to meet its commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

4. To caution Saudi Arabia, in accordance with item B of the indicative list of measures, that in the event that it fails to return to compliance in a timely manner the Meeting of the Parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of the chlorofluorocarbons that are the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/22: Compliance with the Montreal Protocol by Solomon Islands

1. That Solomon Islands reported annual consumption for the controlled substances in Annex A, group I (chlorofluorocarbons), of 1.4 ODP-tonnes for 2006, which exceeds the Party's maximum allowable consumption of 1.1 ODP-tonnes for those controlled substances for that year, and that the Party is therefore in non-compliance with the control measures for those substances under the Protocol for that year;

2. To note, however, that in response to the request for an explanation for its excess consumption contained in decision XX/18 of the Twentieth Meeting of the Parties, Solomon Islands reported that its Custom and Excise Act had been amended in 2007 to include restrictions on imports of chlorofluorocarbons, which therefore had not applied formally prior to that year;

3. To note further Solomon Islands' return to compliance in 2007 and its commitment to restrict imports of chlorofluorocarbons, which had taken effect from 2008;

4. To monitor closely the progress of the Party with regard to its implementation of its obligations under the Protocol;

XXI/23: Non-compliance with the Montreal Protocol by Somalia

Noting that Somalia ratified the Montreal Protocol and its London, Copenhagen, Montreal and Beijing Amendments on 1 August 2001 and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that, while Somalia has not yet had a country programme approved by the Executive Committee of the Multilateral Fund, a country programme has been submitted to the Committee for consideration at its fifty-ninth meeting and is recommended for approval,

1. That Somalia reported annual consumption for the controlled substances in Annex A, group I (chlorofluorocarbons), for 2007 of 79.5 ODP-tonnes, which exceeds the Party's maximum allowable consumption of 36.2 ODP-tonnes for those controlled substances for that year and that Somalia was therefore in non-compliance with the control measures for those substances under the Protocol for that year;

2. To note, however, that Somalia's reported chlorofluorocarbon consumption for 2008 was in compliance with its obligations under the chlorofluorocarbon control measures of the Montreal Protocol for that year;

3. To note with appreciation Somalia's introduction, as called for in decision XX/19, of a system for licensing the imports and exports of ozone-depleting substances, including import quotas, which had taken effect from October 2009;

4. To note also with appreciation Somalia's submission of a plan of action to ensure its prompt return to compliance with the Protocol's chlorofluorocarbon control measures under which, without prejudice to the operation of the financial mechanism of the Protocol, Somalia specifically commits itself:

(a) To reducing chlorofluorocarbon consumption to no greater than zero ODP-tonnes in 2010, save for essential uses that may be authorized by the Parties;

(b) To monitoring its system for licensing the import and export of ozone-depleting substances, including import quotas;

5. To urge Somalia to work with the relevant implementing agencies to implement its plan of action to phase out consumption of chlorofluorocarbons;

6. To monitor closely the progress of Somalia with regard to the implementation of its plan of action and the phase-out of chlorofluorocarbons. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Somalia should continue to receive international assistance to enable it to meet those commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

7. To caution Somalia in accordance with item B of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance, that, in the event that it fails to return to compliance, the Parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of chlorofluorocarbons that are the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/24: Difficulties faced by Timor-Leste as a new Party

Notes with appreciation Timor-Leste's joining the international community in its efforts to protect the ozone layer, with its accession to the Vienna Convention, the Montreal Protocol and all its amendments, making the Vienna Convention and the Montreal Protocol the first international treaties deposited with the United Nations Secretary General to have universal participation,

Notes also that the ozone treaties will enter into force for Timor-Leste on 16 December 2009,

Recognizing the difficulties faced by Timor-Leste by joining the Vienna Convention and the Montreal Protocol and all its amendments shortly before key phase-out dates,

Understanding Timor-Leste's commitments for phasing out ozone-depleting substances under the Montreal Protocol and its amendments within a limited time frame,

1. To urge all Parties to assist Timor-Leste, as a new Party, in controlling the export of ozone-depleting substances and ozone-depleting substance-based technologies into Timor-Leste through the control of trade as per the provisions of the Montreal Protocol and relevant decisions of the Meeting of the Parties and to encourage Timor-Leste to participate in an informal prior informed consent process as referred to in decision XIX/12;

2. To request the Executive Committee when considering project proposals for Timor-Leste to phase out ozone-depleting substances to take into account the special situation of this new Party, which may face difficulties in the phase out of ozone-depleting substances in annexes A, B and E, and to be flexible in considering the project proposals, without prejudice to the possible review of the non-compliance situation of Timor-Leste by the Parties;

3. To request the implementing agencies to provide appropriate assistance to Timor-Leste in institutional strengthening, capacity building, data collection, development of its country programme and national phase-out plans and in continuing its efforts to report to the Secretariat next year, data on consumption of ozone-depleting substances in accordance with the Montreal Protocol requirements;

4. To request the Implementation Committee to consider difficulties faced by Timor-Leste when addressing any possible non-compliance situations faced by Timor-Leste after the date on which the Protocol and its Amendments enter into force for Timor-Leste and report on the compliance situation of Timor-Leste to the Open-ended Working Group preceding the Twenty-Fourth Meeting of the Parties, during which the present decision will be reconsidered.

XXI/25: Non-compliance in 2007 with the provisions of the Protocol governing consumption of the controlled substance in Annex B, group II (carbon tetrachloride), by Turkmenistan and request for a plan of action

Noting that Turkmenistan ratified the Montreal Protocol on 18 November 1993, and the London Amendment on 15 March 1994, and the Copenhagen, Montreal and Beijing Amendments on 28 March 2008, and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved \$336,973 from the Multilateral Fund to enable Turkmenistan's compliance in accordance with Article 10 of the Protocol,

1. That Turkmenistan has reported annual consumption for the controlled substance in Annex B, group II (carbon tetrachloride), for 2008 of 0.3 ODP-tonnes, which exceeds the Party's maximum allowable consumption of zero ODP-tonnes for that controlled substance for that year, and that the Party is therefore in non compliance with the control measures for that substance under the Protocol for that year;

2. To request Turkmenistan to submit to the Secretariat, as a matter of urgency and no later than 31 March 2010, for consideration by the Implementation Committee at its next meeting, a plan of action with time-specific benchmarks to ensure the Party's prompt return to compliance;

3. To monitor closely the progress of Turkmenistan with regard to the phase-out of carbon tetrachloride. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Turkmenistan should continue to receive international assistance to enable it to meet its commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

4. To caution Turkmenistan in accordance with item B of the indicative list of measures, that in the event that it fails to return to compliance in a timely manner the Meeting of the Parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of the carbon tetrachloride that is the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/26: Non-compliance in 2007 and 2008 with the control measures of the Montreal Protocol governing consumption of the controlled substances in Annex A group I (CFCs), by Vanuatu and request for a plan of action

Noting that Vanuatu ratified the Montreal Protocol, and the London and Copenhagen Amendments on 21 November 1994, and is classified as a Party operating under paragraph 1 of Article 5 of the Protocol,

Noting also that the Executive Committee has approved \$88,020 from the Multilateral Fund to enable Vanuatu's compliance in accordance with Article 10 of the Protocol,

1. That Vanuatu has reported annual consumption for the controlled substances in Annex A, group I (chlorofluorocarbons), for 2007 of 0.3 ODP-tonnes and for 2008 of 0.7 ODP-tonnes, which exceeds the Party's maximum allowable consumption of zero ODP-tonnes for those controlled substances for those years, and that the Party is therefore in non-compliance with the control measures for those substances under the Protocol for those years;

2. To request Vanuatu to submit to the Secretariat, as a matter of urgency and no later than 31 March 2010, for consideration by the Implementation Committee at its next meeting, a plan of action with time-specific benchmarks to ensure the Party's prompt return to compliance;

3. To monitor closely the progress of Vanuatu with regard to the phase-out of chlorofluorocarbons. To the degree that the Party is working towards and meeting the specific Protocol control measures, it should continue to be treated in the same manner as a Party in good standing. In that regard, Vanuatu should continue to receive international assistance to enable it to meet its commitments in accordance with item A of the indicative list of measures that may be taken by a Meeting of the Parties in respect of non-compliance;

4. To caution Vanuatu, in accordance with item B of the indicative list of measures, that in the event that it fails to return to compliance in a timely manner the Meeting of the Parties will consider measures consistent with item C of the indicative list of measures. Those measures may include the possibility of actions available under Article 4, such as ensuring that the supply of the chlorofluorocarbons that are the subject of non-compliance is ceased so that exporting Parties are not contributing to a continuing situation of non-compliance;

XXI/27: Membership of the Executive Committee of the Multilateral Fund

1. To note with appreciation the work done by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol with the assistance of the Fund secretariat in 2009;

2. To endorse the selection of Belgium, France, Canada, Japan, Switzerland, Ukraine and United States of America as members of the Executive Committee representing Parties not operating under paragraph 1 of Article 5 of the Protocol and the selection of Colombia, Grenada, Morocco, Namibia, India, Saudi Arabia and Senegal as members representing Parties operating under that paragraph, for one year beginning 1 January 2010;

3. To note the selection of Mr. Javier Camago (Colombia) to serve as Chair and Mr. Philippe Chemouny (Canada) to serve as Vice-Chair of the Executive Committee for one year beginning 1 January 2010;

XXI/28: Evaluation of the financial mechanism of the Montreal Protocol

To start discussing the terms of reference for an evaluation of the financial mechanism of the Montreal Protocol during the Thirtieth Meeting of the Open-Ended Working Group, in 2010, and to finalize them during the Twenty-Third Meeting of the Parties, in 2011, at the latest.

XXI/29: Institutional strengthening

Taking into account that the Parties to the Montreal Protocol have assumed a firm commitment to recover and protect the ozone layer,

Acknowledging that institutional strengthening support from the Multilateral Fund has played a paramount role in acquiring and enhancing the capacity of national ozone units to allow Article 5 Parties to comply with their commitments to ODS phase-out,

Recognizing the heavy workload and future challenges that Article 5 Parties still have to face looking towards the consolidation of CFC, halon and carbon tetrachloride phase-out, the phase-out of methyl bromide and the accelerated HCFC phase-out,

Acknowledging that decision 57/36 of the Executive Committee of the Multilateral Fund limits fund requests for the renewal of institutional strengthening projects up to the end of December 2010 at current levels,

Recognizing that such a decision could have an impact on Article 5 Parties' capacity to handle the complexity involved in ozone-depleting substance phase-out,

1. To urge the Executive Committee to extend financial support for institutional strengthening funding for Article 5 Parties beyond 2010;
2. To urge the Executive Committee to finalize its consideration of funding of institutional strengthening projects as expeditiously as possible, taking into account current and emerging challenges;
3. To recommend that the Executive Committee does not require that institutional strengthening funding be incorporated within funding for HCFC phase-out management plans only, but allows flexibility for an Article 5 party to do so if it so chooses.

XXI/30: Twenty-Second Meeting of the Parties to the Montreal Protocol

To convene the Twenty-Second Meeting of the Parties to the Montreal Protocol at the seat of the Secretariat, in Nairobi, during October 2010, unless other appropriate arrangements are made by the Secretariat in consultation with the Bureau;

XXI/31: Co-Chairs of the Open-ended Working Group of the Parties to the Montreal Protocol

To endorse the selection of Mr. Martin Sirois (Canada) and Mr. Fresnel Araujo (Bolivarian Republic of Venezuela) as Co-Chairs of the Open-ended Working Group of the Parties to the Montreal Protocol in 2010;

Decision XXI/32: Financial matters: Financial reports and budgets

Recalling decision XX/20 on financial matters,

Noting the financial report on the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer for the biennium 2008-2009 ended 31 December 2008;

Recognizing that voluntary contributions are an essential complement for the effective implementation of the Montreal Protocol;

Welcoming the continued efficient management demonstrated by the Secretariat of the finances of the Montreal Protocol Trust Fund;

1. To approve the revised 2009 budget in the amount of \$5,329,104, and the 2010 budget in the amount of \$5,400,398 and to take note of the proposed budget of \$4,935,639 for 2011, as set out in annex I to the report of the twenty first meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer;

2. To authorize the Secretariat to draw down \$1,123,465 in 2010 and note the proposed drawdown of \$658,706 in 2011;

3. To approve, as a consequence of the draw-downs referred to in paragraph 2 above, total contributions to be paid by the Parties of \$4,276,933 for 2010 and note the contributions of \$4,276,933 for 2011, as set out in annex II to the report of the Twenty first Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer;

4. Also to approve that the contributions of individual Parties for 2010 shall be listed in annex [xx] to the report of the Twenty First Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer;

5. To authorize the Secretariat to maintain the operating cash reserve at 15 per cent of the 2010 budget to be used to meet the final expenditures under the Trust Fund;

6. To urge all Parties to pay their outstanding contributions as well as their future contributions promptly and in full;

7. To request the Ozone Secretariat, in cases where the Open Ended Working Group and the Multilateral Fund Executive Committee meetings are held back to back, to consult with the Multilateral Fund Secretariat, with a view to selecting the meeting location which is the most cost effective, taking into account the budgets of both secretariats.

XI. Adoption of the report of the Twenty-First Meeting of the Parties

215. The present report was adopted on Sunday, 8 November 2009, on the basis of the draft report submitted to the Parties.

XII. Closure of the meeting

216. Following the customary exchange of courtesies, the President declared the meeting closed at 9.05 p.m. on Sunday, 8 November 2009.

Annex I

Revised approved 2009, approved 2010 and proposed 2011 budgets

		w/m	2009 (US\$)	w/m	2010 (US\$)	w/m	2011 (US\$)
10	PROJECT PERSONNEL COMPONENT						
1100	Project personnel						
	1101 Executive Secretary (D-2) (shared with the Vienna Convention, VC)	6	157,164	6	161,900	6	166,757
	1102 Deputy Executive Secretary (D-1)	12	240,000	12	252,000	12	259,560
	1103 Senior Legal Officer (P-5)	12	191,000	12	196,730	12	202,632
	1104 Senior Scientific Affairs Officer (P-5) (shared with VC)	6	124,426	6	128,159	6	132,004
	1105 Administrative Officer (P-5) (paid by UNEP)	12	0	12	0	12	0
	1106 Database Manager (Information System & Technology - P4)	12	142,050	12	145,743	12	150,115
	1107 Programme Officer (Communication & Information - P3) (paid from VC)	12	0	12	0	12	0
	1108 Programme Officer (Monitoring and Compliance - P4)	12	180,000	12	185,400	12	190,962
1199	Sub-total		1,034,640		1,069,932		1,102,030
1200	Consultants						
	1201 Assistance in data-reporting, analysis and promotion of the implementation of the Protocol		40,000		40,000		40,000
1299	Sub-total		40,000		40,000		40,000
1300	Administrative Support						
	1301 Administrative Assistant (G-7) (shared with VC)	6	21,250	6	21,250	6	21,250
	1302 Personal Assistant (G-6)	12	26,625	12	26,625	12	26,625
	1303 Programme Assistant (G-6) (paid from VC)	12	0	12	0	12	0
	1304 Programme Assistant (G-6) (shared with VC)	6	17,573	6	17,573	6	17,573
	1305 Information Assistant (G-6) (shared with VC)	6	16,295	6	16,295	6	16,295
	1306 Documentation Clerk (G-6)	12	25,560	12	27,560	12	27,560
	1307 Data Assistant (Computer Information Systems Assistant) (G-7)	12	42,174	12	42,174	12	42,174
	1308 Programme Assistant – Fund (G-7) (paid by UNEP)	12	0	12	0	12	0
	1309 Logistics Assistant (G-4) (paid by UNEP)	12	0	12	0	12	0
	1310 Bilingual Senior Secretary (G-6) (paid from VC)	12	0	12	0	12	0
	1320 Temporary Assistance	12	21,300	12	21,300	12	21,300
	1321 Open-ended Working Group Meetings ¹		539,455		873,704		487,915
	1322 Preparatory and Parties Meetings (shared with VC every three years, applies to the twenty-third Meeting of the Parties to the Montreal Protocol and Ninth Conference of the Parties to the Vienna Convention in 2011)		577,755		500,000		350,000
	1323 Assessment Panel Meetings		100,000		100,000		100,000
	1324 Bureau Meeting		20,000		20,000		20,000
	1325 Implementation Committee Meetings		111,200		111,200		111,200

	1326	MP informal consultation meetings	10,000	10,000	10,000
1399	Sub-total		1,529,187	1,787,681	1,251,892
1600	Travel on Official Business				
	1601	Staff travel on official business	210,000	210,000	210,000
	1602	Conference Services staff travel on official business	15,000	15,000	15,000
1699	Sub-total		225,000	225,000	225,000
1999	COMPONENT TOTAL		2,828,827	3,122,613	2,618,922
30	MEETING/PARTICIPATION COMPONENT				
3300	Support for Participation				
	3301	Assessment Panel Meetings ²	500,000	500,000	500,000
	3302	Preparatory and Parties Meetings (Montreal Protocol bears the cost of the participation of MP & VC delegates from A5 countries at the joint 23rd MOP and 9th COP in 2011)	387,000	350,000	450,000
	3303	Open-ended Working Group Meetings	337,000	300,000	300,000
	3304	Bureau Meeting	20,000	20,000	20,000
	3305	Implementation Committee Meetings	125,000	125,000	125,000
	3306	Consultations in an informal meeting	10,000	10,000	10,000
3399	Sub-total		1,379,000	1,305,000	1,405,000
3999	COMPONENT TOTAL		1,379,000	1,305,000	1,405,000
40	EQUIPMENT AND PREMISES COMPONENT				
4100	Expendable Equipment (items under \$1,500)				
	4101	Miscellaneous expendables (shared with VC)	22,000	22,000	22,000
4199	Sub-total		22,000	22,000	22,000
4200	Non-Expendable Equipment				
	4201	Personal computers and accessories	10,000	10,000	10,000
	4202	Portable computers	5,000	5,000	5,000
	4203	Other office equipment (server, fax, scanner, furniture etc.)	10,000	30,000	20,000
	4204	Photocopiers	10,000	10,000	10,000
4299	Sub-total		35,000	55,000	45,000
4300	Premises				
	4301	Rental of office premises (shared with VC)	42,000	48,000	50,400
4399	Sub-total		42,000	48,000	50,400
4999	COMPONENT TOTAL		99,000	125,000	117,400
50	MISCELLANEOUS COMPONENT				
5100	Operation and Maintenance of Equipment				
	5101	Maintenance of equipment and others (shared with VC)	25,000	25,000	25,000
5199	Sub-total		25,000	25,000	25,000
5200	Reporting Costs				
	5201	Reporting	55,000	55,000	55,000
	5202	Reporting (Assessment Panels)	15,000	15,000	15,000
	5203	Reporting (Protocol Awareness)	5,000	5,000	5,000
5299	Sub-total		75,000	75,000	75,000
5300	Sundry				
	5301	Communications	46,000	46,000	46,000
	5302	Freight charges	30,000	40,000	40,000
	5303	Training	7,000	10,500	10,500
	5304	Others (International Ozone Day)	10,000	10,000	10,000
5399	Sub-total		93,000	106,500	106,500
5400	Hospitality				
	5401	Hospitality	20,000	20,000	20,000
5499	Sub-total		20,000	20,000	20,000

5999	COMPONENT TOTAL	213,000	226,500	226,500
99	TOTAL DIRECT PROJECT COST	4,519,827	4,779,113	4,367,822
	<i>Programme support costs (13%)</i>	587,577	621,285	567,817
	GRAND TOTAL (inclusive of programme support costs)	5,107,404	5,400,398	4,935,639
	Operating cash reserve exclusive of PSC	221,700	0	0
	TOTAL BUDGET	5,329,104	5,400,398	4,935,639
	Draw down ³	1,052,171	1,123,465	658,706
	Contribution from the Parties	4,276,933	4,276,933	4,276,933

1 An amount up to \$400,000 has been added to the budget line to accommodate the cost of activities under discussion by MOP 21 and these funds are not available to reprogramme to other activities.

2 Budgetline covers participation of all TEAP experts to enable the timely completion of the work requested by the Parties.

3 Draw down levels have been set with a view toward maintaining the level of contributions constant through 2011.

Explanatory notes for the revised approved 2009, approved 2010 and proposed 2011 budgets of the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer

Budget line

Comment

Personnel component
1101–1108

Indicative professional salary costs applicable to the Nairobi duty station for 2010–2011 have been used for the budget proposals. Where information on actual staff costs is available, however, the figures have been adjusted accordingly. Unspent commitments normally revert to the Trust Fund for the Montreal Protocol.

An adjustment has been made to budget lines 1101 to 1108 to cover mandatory changes in salaries and emoluments of staff in the Professional category and above.

1105

The post of the Administrative Officer continues to be paid by UNEP from the 13 per cent programme support costs.

Consultants – 1201

Assistance in data reporting, updating of publications and translation of essential features of the Ozone Secretariat website, as well as in the maintenance of a fully interlinked digital system at the Secretariat, will continue to be required. Funds under this line may be transferred to line 1100 to create or support short-term Professional posts if necessary.

Administrative
support/personnel

Standard General Service salary costs applicable to the Nairobi duty station for 2008 have been used for the 2010 – 2011 budget proposals.

1306, 1308 and 1309

The Secretariat requested the upgrade of three administrative support / personnel posts (Generals Service category). The upgrades are vital to ensuring that grades are commensurate with evolving responsibilities and maintaining a highly effective, highly motivated workforce in the crucial years ahead.

1306

The post of Documentation Clerk (1306) has been proposed for upgrading from G4 to G6 because of the revision of duties. The incumbent of this post covers documentation as well as information technology work in view of the increasing need of the Secretariat to deliver technology driven services. The financial implication of this upgrade is minimal and budgetary increase will be in the region of two thousand dollars a year starting from 2010.

Budget line	Comment
1308 & 1309	The post of Programme Assistant – Fund (post 1308) has been proposed for upgrading from G6 to G7 and the Logistics Assistant (post 1309) from G3 to G4. The level of these posts was decided at the 10 th Meeting of the Parties in 1998. Since then, the responsibilities have grown immensely due in part to the increased number of Parties being served by the Secretariat, from 168 in 1998 to 195 in 2009, and also due to increased administrative workload brought about by changing technologies. These 2 upgrades will not have financial implications for the Parties as they are funded by UNEP against the 13 per cent programme support costs.
1310	The post of bilingual secretary is funded from the Vienna Convention Trust Fund.
1320	The Secretariat continues to require funding for general temporary assistance, particularly in the area of documents preparation for meetings, regular website development and maintenance, archiving and arrangements for participants' attendance at meetings.
Administrative support/conference services – 1321–1326	<p>Necessary funds may be transferred from the conference servicing budget lines (1321–1326) should such services be required to be rendered, either by individual consultancies or under corporate contracts.</p> <p>The current conference servicing costs have been based on the following reasons and assumptions:</p> <p>1321: The budget proposed is for one meeting of the Open-ended Working Group to be held each year in 2010 and 2011 in Nairobi or at another United Nations venue, in the six official United Nations languages.</p> <p>1322: The budget for 2011 is lower than in 2009 and 2010 as the cost of the Twenty-third Meeting of the Parties to the Montreal Protocol in 2011 will be shared with the ninth meeting of the Conference of the Parties to the Vienna Convention.</p> <p>It is assumed that the Meeting of the Parties and its preparatory meeting will be held in Nairobi in 2010 and 2011, in the six official United Nations languages. When meetings are not held in Nairobi, the additional costs that that entails will be borne by the Government hosting the meetings.</p> <p>1323: The budget allocation in 2010 and 2011 will cover the costs of organizing annual meetings of the assessment panels and the Technology and Economic Assessment Panel's technical options committees, together with communication and other sundry costs related to the work of Panel members from developing countries and countries with economies in transition.</p> <p>1324: One Bureau meeting is scheduled for each of the years 2010 and 2011, with provision for interpretation and document translation into the appropriate languages based on the membership of the Bureau.</p> <p>1325: At least two Implementation Committee meetings of three days' duration are scheduled for each of the years 2010 and 2011 with interpretation and document translation as required, to be held back-to-back with the Open-ended Working Group meetings and the Meetings of the Parties in those years.</p> <p>1326: At least one informal consultation meeting per year, expected to take place in Nairobi, is envisaged for 2010 and 2011 to facilitate the work of assisting the Parties and also in promoting ratification of and compliance with the Montreal Protocol and its amendments.</p>

Budget line	Comment
Travel on official business – 1601–1602	Travel on official business for 2010 and 2011 is being maintained at the 2009 level.
Meetings/Participation component – 3300	<p>Participation of representatives of developing countries</p> <p>The participation of representatives of Parties operating under paragraph 1 of Article 5 in the various Protocol meetings is assumed at \$5,000 per meeting per representative, taking into account not more than one person's travel costs per country, using the most appropriate and advantageous economy-class fare and United Nations daily subsistence allowances.</p>
3301	<p>The budget provision requested in 2010 and 2011 for members and experts of the assessment panels and the technical options committees attending assessment panel meetings is being maintained at 2009 levels.</p> <p>The Secretariat should continue to use this budget line to ensure funding of the participation of all essential TEAP experts from Article 5 parties needed to enable the timely completion of the work requested by the Parties. If, once those needs are met and any funds remain, the Secretariat is authorized to use such funds flexibly, and in such ways as it may deem necessary to enable the timely completion of the work requested by the Parties. Upon request of the Parties, the Secretariat will provide a breakdown of how the flexibility was utilized.</p>
3302	<p>In 2011, the total participation costs, based on some 80 participants attending the combined ninth meeting of the Conference of the Parties to the Vienna Convention and the Twenty-third Meeting of the Parties to the Montreal Protocol, is borne fully by the Trust Fund for the Montreal Protocol. In 2010, the budget allocation is the same as 2009 levels.</p>
3303	<p>Participation costs are based on some 60 participants attending the Open-ended Working Group meetings in both 2010 and 2011.</p>
3304	<p>Participation costs are based on one Bureau meeting a year for four Bureau members from developing countries or countries with economies in transition at each meeting.</p>
3305	<p>The participation costs for the two Implementation Committee meetings per year are based on eight members from developing countries and countries with economies in transition at each meeting and one representative each from three or four countries invited by the Implementation Committee at each meeting. Provision has also been made for travel by the Implementation Committee President or Vice-President from a country operating under paragraph 1 of Article 5 to attend three Executive Committee meetings a year.</p>
3306	<p>Funds have been allocated to finance the participation of two participants from developing countries and countries with economies in transition as part of informal consultations in 2010 and 2011 on critical issues relating to the Montreal Protocol, which, it is expected, will be held in Nairobi.</p>
Equipment and premises component	
Expendable equipment – 4101	<p>The cost of miscellaneous expendables is being increased minimally in 2010 and 2011 to take into account inflation. Resource use is being monitored constantly to maintain low expenditure levels.</p>

Budget line	Comment
Non-expendable equipment – 4203	Additional funds for 2010 and 2011 have been allocated to provide for increased server capacity to cope with the demands of paperless meetings, and to enable the Secretariat to replace equipment as and when required.
Premises (rent) – 4300	The allocation for rental of premises in 2010 and 2011 has been based on the increase advised by the United Nations Controller for rental rates in Nairobi.
Miscellaneous component	The provision for operation and maintenance of equipment is being increased minimally in 2010 and 2011 to cover increased maintenance costs for constantly increasing server capacity and additional computing requirements for staff.
Operation and maintenance of equipment – 5101	
Reporting costs (including editing, translation, duplication, publication and printing) – 5201–5203	General reporting costs for the Secretariat are provided for under these lines. Line 5202 is reserved for reporting of assessment panels. A small amount is allocated in line 5203 for any editing, translation, duplication, publication and printing related to Protocol awareness campaigns.
Sundry – Communications – 5301	Careful monitoring of telecommunications resources and the use of electronic mail instead of facsimile communications enable the Secretariat to maintain a relatively low budget provision under this line.
Freight and post – 5302	This line has been reduced by \$10,000 in 2008 to signal the Secretariat's and the Parties' commitment to the use of electronic mail for disseminating correspondence and meeting documentation. In the revision proposed for 2009, this budgetline is being reduced by half from \$60,000 to \$30,000 as more Parties have opted to receive communications and meeting documentation by electronic mail. However, while the cost of posting and shipping of correspondence and meeting documentation has been reduced in keeping with maximizing the benefits of global electronic communication media, some provision has to be set aside for shipment of necessary equipment related to paperless meetings.
Training – 5303	The provision for training will be maintained to meet evolving training needs and to cater for training schemes introduced by the United Nations as a result of the continuing human resources reform programme.
Others (International Ozone Day) – 5304	The Ozone Secretariat will continue to provide assistance to specific countries during 2010 and 2011 to assist in their preparations for the celebration of the International Day for the Preservation of the Ozone Layer.

Annex II

Trust Fund for the Montreal Protocol on the Substances that Deplete the Ozone Layer

Scale of contributions by the Parties for 2010 and 2011 based on the United Nations scale of assessments

(General Assembly resolution A/RES/61/237 of 13 February 2007, with a maximum assessment rate of 22 per cent)
(in United States dollars)

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
1	Afghanistan	0.001	0.000	0.000	0	0
2	Albania	0.006	0.000	0.000	0	0
3	Algeria	0.085	0.000	0.000	0	0
4	Andorra	0.008	0.000	0.000	0	0
5	Angola	0.003	0.000	0.000	0	0
6	Antigua and Barbuda	0.002	0.000	0.000	0	0
7	Argentina	0.325	0.325	0.324	13,853	13,853
8	Armenia	0.002	0.000	0.000	0	0
9	Australia	1.787	1.787	1.781	76,171	76,171
10	Austria	0.887	0.887	0.884	37,808	37,808
11	Azerbaijan	0.005	0.000	0.000	0	0
12	Bahamas	0.016	0.000	0.000	0	0
13	Bahrain	0.033	0.000	0.000	0	0
14	Bangladesh	0.010	0.000	0.000	0	0
15	Barbados	0.009	0.000	0.000	0	0
16	Belarus	0.020	0.000	0.000	0	0
17	Belgium	1.102	1.102	1.098	46,973	46,973
18	Belize	0.001	0.000	0.000	0	0
19	Benin	0.001	0.000	0.000	0	0
20	Bhutan	0.001	0.000	0.000	0	0
21	Bolivia	0.006	0.000	0.000	0	0
22	Bosnia and Herzegovina	0.006	0.000	0.000	0	0
23	Botswana	0.014	0.000	0.000	0	0
24	Brazil	0.876	0.876	0.873	37,339	37,339

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
25	Brunei Darussalam	0.026	0.000	0.000	0	0
26	Bulgaria	0.020	0.000	0.000	0	0
27	Burkina Faso	0.002	0.000	0.000	0	0
28	Burundi	0.001	0.000	0.000	0	0
29	Cambodia	0.001	0.000	0.000	0	0
30	Cameroon	0.009	0.000	0.000	0	0
31	Canada	2.977	2.977	2.967	126,894	126,894
32	Cape Verde	0.001	0.000	0.000	0	0
33	Central African Republic	0.001	0.000	0.000	0	0
34	Chad	0.001	0.000	0.000	0	0
35	Chile	0.161	0.161	0.160	6,863	6,863
36	China	2.667	2.667	2.658	113,680	113,680
37	Colombia	0.105	0.105	0.105	4,476	4,476
38	Comoros	0.001	0.000	0.000	0	0
39	Congo	0.001	0.000	0.000	0	0
40	Cook Islands	-	0.000	0.000	0	0
41	Costa Rica	0.032	0.000	0.000	0	0
42	Cote d' Ivoire	0.009	0.000	0.000	0	0
43	Croatia	0.050	0.000	0.000	0	0
44	Cuba	0.054	0.000	0.000	0	0
45	Cyprus	0.044	0.000	0.000	0	0
46	Czech Republic	0.281	0.281	0.280	11,978	11,978
47	Democratic People's Republic of Korea	0.007	0.000	0.000	0	0
48	Democratic Republic of Congo	0.003	0.000	0.000	0	0
49	Denmark	0.739	0.739	0.737	31,500	31,500
50	Djibouti	0.001	0.000	0.000	0	0
51	Dominica	0.001	0.000	0.000	0	0
52	Dominican Republic	0.024	0.000	0.000	0	0
53	Ecuador	0.021	0.000	0.000	0	0
54	Egypt	0.088	0.000	0.000	0	0
55	El Salvador	0.020	0.000	0.000	0	0

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
56	Equatorial Guinea	0.002	0.000	0.000	0	0
57	Eritrea	0.001	0.000	0.000	0	0
58	Estonia	0.016	0.000	0.000	0	0
59	Ethiopia	0.003	0.000	0.000	0	0
60	European Community	2.500	2.500	2.492	106,562	106,562
61	Fiji	0.003	0.000	0.000	0	0
62	Finland	0.564	0.564	0.562	24,040	24,040
63	France	6.301	6.301	6.280	268,579	268,579
64	Gabon	0.008	0.000	0.000	0	0
65	Gambia	0.001	0.000	0.000	0	0
66	Georgia	0.003	0.000	0.000	0	0
67	Germany	8.577	8.577	8.548	365,593	365,593
68	Ghana	0.004	0.000	0.000	0	0
69	Greece	0.596	0.596	0.594	25,404	25,404
70	Grenada	0.001	0.000	0.000	0	0
71	Guatemala	0.032	0.000	0.000	0	0
72	Guinea	0.001	0.000	0.000	0	0
73	Guinea-Bissau	0.001	0.000	0.000	0	0
74	Guyana	0.001	0.000	0.000	0	0
75	Haiti	0.002	0.000	0.000	0	0
76	Holy See	0.001	0.000	0.000	0	0
77	Honduras	0.005	0.000	0.000	0	0
78	Hungary	0.244	0.244	0.243	10,400	10,400
79	Iceland	0.037	0.000	0.000	0	0
80	India	0.450	0.450	0.448	19,181	19,181
81	Indonesia	0.161	0.161	0.160	6,863	6,863
82	Iran (Islamic Republic of)	0.180	0.180	0.179	7,672	7,672
83	Iraq	0.015	0.000	0.000	0	0
84	Ireland	0.445	0.445	0.443	18,968	18,968
85	Israel	0.419	0.419	0.418	17,860	17,860
86	Italy	5.079	5.079	5.062	216,492	216,492

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
87	Jamaica	0.010	0.000	0.000	0	0
88	Japan	16.624	16.624	16.568	708,595	708,595
89	Jordan	0.012	0.000	0.000	0	0
90	Kazakhstan	0.029	0.000	0.000	0	0
91	Kenya	0.010	0.000	0.000	0	0
92	Kiribati	0.001	0.000	0.000	0	0
93	Kuwait	0.182	0.182	0.181	7,758	7,758
94	Kyrgyzstan	0.001	0.000	0.000	0	0
95	Lao People's Democratic Republic	0.001	0.000	0.000	0	0
96	Latvia	0.018	0.000	0.000	0	0
97	Lebanon	0.034	0.000	0.000	0	0
98	Lesotho	0.001	0.000	0.000	0	0
99	Liberia	0.001	0.000	0.000	0	0
100	Libyan Arab Jamahiriya	0.062	0.000	0.000	0	0
101	Liechtenstein	0.010	0.000	0.000	0	0
102	Lithuania	0.031	0.000	0.000	0	0
103	Luxembourg	0.085	0.000	0.000	0	0
104	Madagascar	0.002	0.000	0.000	0	0
105	Malawi	0.001	0.000	0.000	0	0
106	Malaysia	0.190	0.190	0.189	8,099	8,099
107	Maldives	0.001	0.000	0.000	0	0
108	Mali	0.001	0.000	0.000	0	0
109	Malta	0.017	0.000	0.000	0	0
110	Marshall Islands	0.001	0.000	0.000	0	0
111	Mauritania	0.001	0.000	0.000	0	0
112	Mauritius	0.011	0.000	0.000	0	0
113	Mexico	2.257	2.257	2.249	96,204	96,204
114	Micronesia (Federated State of)	0.001	0.000	0.000	0	0
115	Monaco	0.003	0.000	0.000	0	0
116	Mongolia	0.001	0.000	0.000	0	0
117	Montenegro	0.001	0.000	0.000	0	0

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
118	Morocco	0.042	0.000	0.000	0	0
119	Mozambique	0.001	0.000	0.000	0	0
120	Myanmar	0.005	0.000	0.000	0	0
121	Namibia	0.006	0.000	0.000	0	0
122	Nauru	0.001	0.000	0.000	0	0
123	Nepal	0.003	0.000	0.000	0	0
124	Netherlands	1.873	1.873	1.867	79,836	79,836
125	New Zealand	0.256	0.256	0.255	10,912	10,912
126	Nicaragua	0.002	0.000	0.000	0	0
127	Niger	0.001	0.000	0.000	0	0
128	Nigeria	0.048	0.000	0.000	0	0
129	Niue	-	0.000	0.000	0	0
130	Norway	0.782	0.782	0.779	33,333	33,333
131	Oman	0.073	0.000	0.000	0	0
132	Pakistan	0.059	0.000	0.000	0	0
133	Palau	0.001	0.000	0.000	0	0
134	Panama	0.023	0.000	0.000	0	0
135	Papua New Guinea	0.002	0.000	0.000	0	0
136	Paraguay	0.005	0.000	0.000	0	0
137	Peru	0.078	0.000	0.000	0	0
138	Philippines	0.078	0.000	0.000	0	0
139	Poland	0.501	0.501	0.499	21,355	21,355
140	Portugal	0.527	0.527	0.525	22,463	22,463
141	Qatar	0.085	0.000	0.000	0	0
142	Republic of Korea	2.173	2.173	2.166	92,624	92,624
143	Republic of Moldova	0.001	0.000	0.000	0	0
144	Romania	0.070	0.000	0.000	0	0
145	Russian Federation	1.200	1.200	1.196	51,150	51,150
146	Rwanda	0.001	0.000	0.000	0	0
147	Saint Kitts and Nevis	0.001	0.000	0.000	0	0
148	Saint Lucia	0.001	0.000	0.000	0	0

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
149	Saint Vincent and the Grenadines	0.001	0.000	0.000	0	0
150	Samoa	0.001	0.000	0.000	0	0
151	San Marino	0.003	0.000	0.000	0	0
152	Sao Tome and Principe	0.001	0.000	0.000	0	0
153	Saudi Arabia	0.748	0.748	0.745	31,883	31,883
154	Senegal	0.004	0.000	0.000	0	0
155	Serbia	0.021	0.000	0.000	0	0
156	Seychelles	0.002	0.000	0.000	0	0
157	Sierra Leone	0.001	0.000	0.000	0	0
158	Singapore	0.347	0.347	0.346	14,791	14,791
159	Slovakia	0.063	0.000	0.000	0	0
160	Slovenia	0.096	0.000	0.000	0	0
161	Solomon Islands	0.001	0.000	0.000	0	0
162	Somalia	0.001	0.000	0.000	0	0
163	South Africa	0.290	0.290	0.289	12,361	12,361
164	Spain	2.968	2.968	2.958	126,511	126,511
165	Sri Lanka	0.016	0.000	0.000	0	0
166	Sudan	0.010	0.000	0.000	0	0
167	Suriname	0.001	0.000	0.000	0	0
168	Swaziland	0.002	0.000	0.000	0	0
169	Sweden	1.071	1.071	1.067	45,651	45,651
170	Switzerland	1.216	1.216	1.212	51,832	51,832
171	Syrian Arab Republic	0.016	0.000	0.000	0	0
172	Tajikistan	0.001	0.000	0.000	0	0
173	Thailand	0.186	0.186	0.185	7,928	7,928
174	The former Yugoslav Republic of Macedonia	0.005	0.000	0.000	0	0
175	Timor-Leste					
176	Togo	0.001	0.000	0.000	0	0
177	Tonga	0.001	0.000	0.000	0	0
178	Trinidad and Tobago	0.027	0.000	0.000	0	0
179	Tunisia	0.031	0.000	0.000	0	0

	NAME OF PARTY	UN scale of assesment for years 2007-2009	Adjusted UN scale to exclude non-contributors	Adjusted UN scale with 22% maximum assessment rate considered	2010 CONTRIBUTIONS BY PARTIES	INDICATIVE 2011 CONTRIBUTIONS BY PARTIES
180	Turkey	0.381	0.381	0.380	16,240	16,240
181	Turkmenistan	0.006	0.000	0.000	0	0
182	Tuvalu	0.001	0.000	0.000	0	0
183	Uganda	0.003	0.000	0.000	0	0
184	Ukraine	0.045	0.000	0.000	0	0
185	United Arab Emirates	0.302	0.302	0.301	12,873	12,873
186	United Kingdom	6.642	6.642	6.620	283,114	283,114
187	United Republic of Tanzania	0.006	0.000	0.000	0	0
188	United States of America	22.000	22.000	21.926	937,746	937,746
189	Uruguay	0.027	0.000	0.000	0	0
190	Uzbekistan	0.008	0.000	0.000	0	0
191	Vanuatu	0.001	0.000	0.000	0	0
192	Venezuela (Bolivarian Republic of)	0.200	0.200	0.199	8,525	8,525
193	Vietnam	0.024	0.000	0.000	0	0
194	Yemen	0.007	0.000	0.000	0	0
195	Zambia	0.001	0.000	0.000	0	0
196	Zimbabwe	0.008	0.000	0.000	0	0
	Total	102.500	100.339	100.000	4,276,933	4,276,933

Annex III

Declaration on High-GWP alternatives to ODSs

By: Angola, Cameroon, Canada, Chad, Comoros, Congo, Dominican Republic, Egypt, Fiji, Gabon, Grenada, Guinea Bissau, Indonesia, Japan, Kiribati, Madagascar, Marshall Islands, Mali, Mauritania, Mauritius, Mexico, Micronesia, Morocco, Namibia, New Zealand, Nigeria, Papua New Guinea, Palau, Saint Lucia, Solomon Islands, Somalia, Sudan, Switzerland, Timor-Leste, Togo, Tonga, Tunisia, United States, Zambia.

Aware of the wide agreement among scientists that climate change will threaten present and future generations unless more stringent measures are adopted and implemented urgently,

Concerned that climate change is occurring faster than previously predicted,

Mindful that certain high-GWP alternatives to ODSs used to replace certain ozone depleting substances are powerful greenhouse gases and are contributing to climate change,

Emphasize the fact that the substitution of hydrochlorofluorocarbons (HCFCs) need not necessarily rely on the use of high-GWP alternatives;

Also aware that more environmentally sound alternative substances and technologies already exist or are rapidly being developed and that in various sectors a transition away from high-GWP alternatives to ODSs can already be achieved,

Also aware that the Montreal Protocol is well-suited to phase-down high-GWP alternatives to ODSs, having already phased-out similar chemicals in the same sectors that now utilize high-GWP alternatives to ODSs,

Stress the need to review the possibility of appropriately amending the Montreal Protocol to include a progressive reduction of the production and consumption of select high-GWP alternatives to ODSs as controlled substances, and to ensure appropriate coordination with the UNFCCC and Kyoto Protocol, including adequate reporting,

Recognizing that certain high-GWP alternatives to ODSs are within the basket of greenhouse gases controlled by the Kyoto Protocol and amendments to the Montreal Protocol should be agreed to in a manner that neither excludes controlled high-GWP substances from the scope of the UNFCCC or Kyoto Protocol, nor affect existing commitments undertaken by Parties thereto,

Encourage all states to urgently consider phasing-down the production and consumption of high-GWP alternatives to ODSs where alternatives exist,

Agree to commit to encourage and facilitate the accelerated development of climate friendly substituting chemicals, products, and technologies for all applications of HCFCs,

Agree to facilitate the access to relevant scientific information, research results, training, and the transfer of technology and its implementation to all Article 5 Parties,

Agree to take appropriate measures to limit the use of high-GWP alternatives to ODSs as soon as practicable.

Port Ghalib, Egypt, 8 November 2009

TWENTY-FIRST MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER: 4 – 8 NOVEMBER 2009

This twenty-first meeting is convening from 4-8 November 2009, in Port Ghalib, Egypt. A preparatory segment will take place from Wednesday to Friday, and the high-level segment will convene on Saturday and Sunday.

Delegates will consider decisions on a range of issues, *inter alia*: environmentally sound management of banks of ozone-depleting substances; a proposal on nominations for essential-use exemptions for 2010 and 2011; campaign production of chlorofluorocarbons (CFCs) for metered-dose inhalers (MDIs); issues related to methyl bromide; issues arising out of the report of the Technology and Economic Assessment Panel (TEAP); and issues related to the financial mechanism of the Montreal Protocol. During the meeting, delegates will also consider an amendment proposal from Canada, Mexico and the US, as well as a proposal submitted by the Federated States of Micronesia (FSM) and Mauritius, on phasing down hydrofluorocarbons (HFCs) under the Montreal Protocol.

A BRIEF HISTORY OF THE OZONE REGIME

Concerns that the Earth's stratospheric ozone layer could be at risk from CFCs and other anthropogenic substances were first raised in the early 1970s. At that time, scientists warned that the release of these substances into the atmosphere could deplete the ozone layer, hindering its ability to prevent harmful ultraviolet rays from reaching the Earth. This would adversely affect ocean ecosystems, agricultural productivity and animal populations, and harm humans through higher rates of skin cancers, cataracts and weakened immune systems. In response to this growing concern, the United Nations Environment Programme (UNEP) convened a conference in March 1977 that adopted a World Plan of Action on the Ozone Layer and established a Coordinating Committee to guide future international action on ozone protection.

VIENNA CONVENTION: In May 1981, the UNEP Governing Council launched negotiations on an international agreement to protect the ozone layer and, in March 1985, the Vienna Convention for the Protection of the Ozone Layer was adopted. The Convention called for cooperation on monitoring,

research and data exchange, but did not impose obligations to reduce the use of ozone-depleting substances (ODS). The Convention now has 196 parties.

MONTREAL PROTOCOL: In September 1987, efforts to negotiate binding obligations to reduce the use of ODS led to the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer. The Protocol introduced control measures for some CFCs and halons for developed countries (non-Article 5 parties). Developing countries (Article 5 parties) were granted a grace period allowing them to increase their use of these ODS before taking on commitments. The Protocol currently has 196 parties.

Since 1987, several amendments and adjustments to the Protocol have been adopted, adding new obligations and additional ODS, and adjusting existing control schedules. Amendments require ratification by a defined number of parties before they enter into force, while adjustments enter into force automatically.

LONDON AMENDMENT AND ADJUSTMENTS: Delegates to the second Meeting of the Parties (MOP-2), which took place in London, UK, in 1990, tightened control schedules and agreed to add ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform. To date, 193 parties have ratified the London Amendment. MOP-2 also established the Multilateral Fund (MLF), which meets the incremental costs incurred by Article 5 parties in implementing the Protocol's control measures and finances clearinghouse functions, including technical assistance, information, training, and the costs of the MLF Secretariat. The Fund is replenished every three years, and has received pledges of over US\$2.8 billion since its inception.

COPENHAGEN AMENDMENT AND ADJUSTMENTS: At MOP-4, held in Copenhagen, Denmark, in 1992, delegates tightened existing control schedules and added controls on methyl bromide, hydrobromofluorocarbons and hydrochlorofluorocarbons (HCFCs). MOP-4 also agreed to enact non-compliance procedures and to establish an Implementation Committee. The Implementation Committee examines cases of possible non-compliance by parties, and makes recommendations to the MOP aimed at securing full compliance. To date, 190 parties have ratified the Copenhagen Amendment.

MONTREAL AMENDMENT AND ADJUSTMENTS: At MOP-9, held in Montreal, Canada, in 1997, delegates agreed to a new licensing system for the import and export of ODS, in addition to tightening existing control schedules. They also

agreed to ban trade in methyl bromide with non-parties to the Copenhagen Amendment. To date, 178 parties have ratified the Montreal Amendment.

BEIJING AMENDMENT AND ADJUSTMENTS: At MOP-11, held in Beijing, China, in 1999, delegates agreed to controls on bromochloromethane and additional controls on HCFCs, and to reporting on methyl bromide for quarantine and pre-shipment (QPS) applications. At present, 160 parties have ratified the Beijing Amendment.

MOP-15 AND FIRST EXTRAORDINARY MOP: MOP-15, held in Nairobi, Kenya, in 2003, resulted in decisions on issues including the implications of the entry into force of the Beijing Amendment. However, disagreements surfaced over exemptions allowing the use of methyl bromide beyond 2004 for critical uses where no technically or economically feasible alternatives were available. Delegates could not reach agreement and took the unprecedented step of calling for an “extraordinary” MOP. The first Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP-1) took place in March 2004, in Montreal, Canada. Parties agreed to critical-use exemptions (CUEs) for methyl bromide for 2005 only. The introduction of a “double-cap” concept distinguishing between old and new production of methyl bromide was central to this compromise. Parties agreed to a cap on new production of 30% of parties’ 1991 baseline levels, meaning that where the capped amount was insufficient for approved critical uses in 2005, parties were required to use existing stockpiles.

MOP-16 AND EX-MOP2: MOP-16 took place in Prague, the Czech Republic, in November 2004. Work on methyl bromide exemptions for 2006 was not completed and parties decided to hold a second Ex-MOP. ExMOP-2 was held in July 2005, in Montreal, Canada. Parties agreed to supplementary levels of CUEs for 2006. Under this decision, parties also agreed that: CUEs allocated domestically that exceed levels permitted by the MOP must be drawn from existing stocks; methyl bromide stocks must be reported; and parties must “endeavor” to allocate CUEs to the particular use categories specified in the decision.

COP-7/MOP-17: MOP-17 was held jointly with the seventh Conference of the Parties to the Vienna Convention (COP-7) in Dakar, Senegal, in December 2005. Parties approved essential-use exemptions for 2006 and 2007, supplemental CUEs for 2006 and CUEs for 2007, and production and consumption of methyl bromide in non-Article 5 parties for laboratory and analytical critical uses. Other decisions included the replenishment of the MLF with US\$470.4 million for 2006-2008, and agreement on terms of reference for a feasibility study on developing a monitoring system for the transboundary movement of controlled ODS.

MOP-18: MOP-18 took place in New Delhi, India, from 30 October - 3 November 2006. Parties adopted decisions on, *inter alia*: future work following the Ozone Secretariat’s workshop on the Special Report of the Intergovernmental Panel on Climate Change and the TEAP; difficulties faced by some Article 5 parties manufacturing CFC-based MDIs; treatment of stockpiled ODS relative to compliance; and a feasibility study on developing a system for monitoring the transboundary movement of ODS.

MOP-19: MOP-19 took place in Montreal, Canada in September 2007. Delegates adopted 29 decisions, including on: an accelerated phase-out of HCFCs; essential-use nominations and other issues arising out of the 2006 reports of the TEAP; critical-use nominations for methyl bromide; and monitoring transboundary movements and illegal trade in ODS.

COP-8/MOP-20: MOP-20 was held jointly with COP-8 of the Vienna Convention in Doha, Qatar in November 2008. Parties agreed to replenish the MLF with US\$490 million for 2009-2011 and adopted other decisions concerning, *inter alia*: the environmentally sound disposal of ODS; approval of 2009 and 2010 CUEs for methyl bromide; and compliance and reporting issues. This meeting was also the Protocol’s first paperless meeting.

CURRENT ODS CONTROL SCHEDULES: Under the amendments to the Montreal Protocol, non-Article 5 parties were required to phase out production and consumption of: halons by 1994; CFCs, CTC, hydrobromochlorofluorocarbons and methyl chloroform by 1996; bromochloromethane by 2002; and methyl bromide by 2005. Article 5 parties were required to phase out production and consumption of hydrobromochlorofluorocarbons by 1996 and bromochloromethane by 2002. Article 5 parties must still phase out: production and consumption of CFCs, halons and CTC by 2010; and methyl chloroform and methyl bromide by 2015. Under the accelerated phase-out of HCFC adopted at MOP-19, HCFC production and consumption by Article 2 countries was to be frozen in 2004 and phased-out by 2020, while in Article 5 parties, HCFC production and consumption is to be frozen by 2013 and phased-out by 2030 (with interim targets prior to those dates, starting in 2015 for Article 5 parties). There are exemptions to these phase-outs to allow for certain uses lacking feasible alternatives.

INTERSESSIONAL HIGHLIGHTS

EXECUTIVE COMMITTEE: The Executive Committee of the MLF held its fifty-eighth session to consider issues associated with the Fund convened from 6-10 July in Montreal, Canada. The session addressed, *inter alia*: status of contributions and disbursements; status of resources and planning; and programme implementation.

OPEN-ENDED WORKING GROUP: The twenty-ninth meeting of the Montreal Protocol’s Open-ended Working Group (OEWG-29) convened in Geneva, Switzerland from 15-18 July 2009. Delegates considered several issues arising from the 2009 Progress Report of the TEAP, as well as the treatment of stockpiled ODS relative to compliance, a proposed evaluation of the MLF, and institutional strengthening of national ozone units. OEWG-29 also considered a proposal by Mauritius and the FSM to amend the Montreal Protocol to collect and destroy ODS banks and to regulate the phase-down of HFCs. OEWG-29 was preceded by the Workshop on the Environmentally Sound Management of Banks of ODS, held 13 July 2009, and the Dialogue on High Global Warming Potential (GWP) ODS Alternatives, held 14 July 2009.

TEAP AND TOCs: Several of the Technical Options Committees (TOCs) met between May and October 2009 to further their work in the lead-up to MOP-20. The work of the TOCs and the Task Force are included in the TEAP’s 2009 reports, which will be considered at MOP-21.

IMPLEMENTATION COMMITTEE: The forty third meeting of the Implementation Committee under the Non-Compliance Procedure convened in Port Ghalib, Egypt, from 31 October - 1 November 2009. The Implementation Committee considered information provided by the Secretariat of the MLF on relevant decisions of the Executive Committee of the Fund and on activities carried out by implementing agencies and non-compliance related issues. Its recommendations will be considered at MOP-21.

MOP-21 HIGHLIGHTS

WEDNESDAY, 4 NOVEMBER 2009

The preparatory segment of the twenty-first Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP-21) opened in Port Ghalib, Egypt, on Wednesday 4 November 2009.

In the morning, delegates exchanged views on the proposals to amend the Montreal Protocol to phase down hydrofluorocarbons (HFCs). During the afternoon, delegates discussed issues related to the Multilateral Fund (MLF), a proposal on institutional strengthening, and heard a presentation by the Technical and Economic Assessment Panel (TEAP) on destruction of ODS.

OPENING OF THE PREPARATORY SEGMENT

Preparatory Segment Co-Chair Maqsood Muhammad Akhtar (Pakistan) opened the session. Maged George, Minister for Environmental Affairs, Egypt, welcomed participants, emphasizing that the Montreal Protocol was one of the most successful international environmental agreements, and that the aim of this meeting was to further increase its effectiveness.

Marcos González, Executive Secretary, Ozone Secretariat, highlighted achievements made by the ozone treaties marked by universal ratification and phase-out of ODS. He noted the heavy agenda and outlined the major items requiring consideration at MOP-21, including: destruction of ODS banks; HFCs; alternatives to hydrochlorofluorocarbons (HCFCs) in the refrigeration and air-conditioning sectors; quarantine and pre-shipment exemptions; and matters related to the financial mechanism.

ORGANIZATIONAL MATTERS

Co-Chair Martin Sirois (Canada) introduced the agenda (UNEP/Ozl.Pro 21/1) together with the organization of work. It was adopted with minor amendments.

CONSIDERATION OF MEMBERSHIP OF MONTREAL PROTOCOL BODIES FOR 2010

Co-Chair Akhtar reminded participants of the need to nominate members to the Bureau, the Implementation Committee and the Executive Committee of the MLF, noting that the President of the Bureau would be from the Group of Latin American and Caribbean Countries (GRULAC).

FINANCIAL REPORTS AND BUDGETS OF THE TRUST FUNDS FOR THE VIENNA CONVENTION AND THE MONTREAL PROTOCOL

Co-Chair Akhtar noted the need for parties to establish a budget committee to deliberate on and recommend, among other things, a revised budget for 2009, a budget for 2010 and

an indicative budget for 2011 (UNEP/Ozl.Pro.21/4 and Add.1). CANADA, the US, JAPAN, SWEDEN and SWITZERLAND volunteered to participate in the group.

HIGH GLOBAL WARMING POTENTIAL ALTERNATIVES TO OZONE-DEPLETING SUBSTANCES

PROPOSED AMENDMENT TO THE MONTREAL PROTOCOL: Co-Chair Sirois introduced this item and invited the proponents of the two proposed amendments to introduce them. In its introduction, FSM emphasized the urgency of undertaking an HFC phase-down. MEXICO presented the North American amendment proposal, noting that the objective of the modification to the Protocol is to include a production and consumption phase-down of HFCs in both Article 5 and non-Article 5 countries. CANADA highlighted the need to phase down HFCs partly because the rise of HFC use is directly related to the phase-out of HCFCs, and noted that the Protocol is uniquely placed to phase down these chemicals due to the existence of the TEAP and MLF. The US emphasized that taking action on a HFC phase-down would send a signal to private sector partners to develop new alternatives that protect the ozone and climate systems; said that language in the Vienna Convention supports addressing HFCs under the Montreal Protocol; and underscored that the amendment would not affect the UNFCCC since the climate convention focuses on HFC emissions, not on the production and consumption.

In the ensuing discussion, Sweden, on behalf of the EU, emphasized that the regulation of greenhouse gases should be under the umbrella of the climate regime but that after the Copenhagen climate meeting the Montreal Protocol could present a tool to develop and implement a global arrangement for the phase-down of HFCs. NORWAY supported the basic principles of both amendment proposals and highlighted the need to take decisions based on solid data. JAPAN highlighted the need to take action on HFCs, but also to consider carefully the interpretation of the Vienna Convention. AUSTRALIA said it was ready to consider all the proposals and highlighted importance of dialogue with UNFCCC. NEW ZEALAND stressed the benefits of including control of HFCs in the Montreal Protocol. SAINT LUCIA supported a phase-down approach to give industry time to identify alternatives. GRENADA, NIGERIA, CAMEROON and the Solomon Islands, on behalf of the PACIFIC SMALL ISLAND DEVELOPING STATES, supported the amendment proposals.

SWITZERLAND supported action on HFCs, but stated details such as baseline references and phase-down strategies required discussion. INDONESIA stressed that developing countries are still working on HCFC phase-out. COLOMBIA and ARGENTINA emphasized the need to further consider

technical, financial and legal aspects of the proposals, with ARGENTINA explaining it required more time to consider the issue. SENEGAL said that many questions needed to be addressed before moving forward with an amendment. The DOMINICAN REPUBLIC clarified that its position would be announced Friday.

INDIA, supported by JORDAN, stressed that HFCs are not ODS and are therefore outside the ambit of the Montreal Protocol. CHINA, supported by JORDAN, highlighted that the proposed amendment would cause a conflict in international law, set a dangerous precedent, and preferred focusing discussions on efforts to phase out HCFCs. PAKISTAN, YEMEN, VENEZUELA, MALAYSIA, SAUDIA ARABIA and BRAZIL opposed controlling HFCs under the Montreal Protocol. MALAYSIA and BRAZIL called for prioritizing the phase-out of HCFCs and destruction of ODS banks.

GREENPEACE INTERNATIONAL recommended, *inter alia*, phasing out HFCs globally by 2020 without a grace period for developing countries, saying this would be to their benefit. GREEN COOLING ASSOCIATION emphasized that an HFC phase-out is technically and commercially possible, and stressed the need for policy certainty.

FURTHER CONSIDERATION OF WORK INITIATED BY OEWG-29: SWITZERLAND said a number of points still needed to be clarified in order to move forward on the two draft decisions on HCFCs and HFCs (XXI/[I] and XXI/[J] in UNEP/OzL.Pro.21.3).

Delegates established a contact group on high global warming potential alternatives, to be co-chaired by Laura Berón (Argentina) and Mikkel Sorensen (Denmark).

ISSUES RELATED TO THE FINANCIAL MECHANISM OF THE MONTREAL PROTOCOL

TERMS OF REFERENCE OF EVALUATION OF THE FINANCIAL MECHANISM OF THE MONTREAL PROTOCOL: Co-Chair Akhtar noted that a draft decision concerning evaluation of the financial mechanism of the Montreal Protocol was forwarded to MOP-21 with bracketed text. Co-Chair Akhtar suggested and delegates agreed to establish a contact group on the MLF to consider this issue.

PROPOSAL ON INSTITUTIONAL STRENGTHENING ACTIVITIES UNDER THE MULTILATERAL FUND: Co-Chair Siros reminded participants of the need to consider a draft decision relating to the funding of institutional strengthening through the MLF (UNEP/OzL.Pro.21/3).

GRULAC, supported by BURKINA FASO, PAKISTAN, the AFRICA GROUP, KENYA, SAUDI ARABIA, INDIA, KUWAIT, MALAYSIA, MAURITIUS, LEBANON and others, emphasized institutional strengthening beyond 2010 as being crucial for Article 5 parties' ability to fully implement present and future agreements in the Montreal Protocol.

The US outlined the importance of institutional strengthening in contributing to the successful implementation of the Montreal Protocol and for HCFC phase out. He said that a "new concept" for institutional strengthening would be considered at the Executive Committee (ExComm) meeting, scheduled to convene after MOP-21. AUSTRALIA supported addressing this matter at the ExComm. CHINA underscored the need for continued institutional strengthening, citing the significant work remaining to phase out ODS. The EU, with SWITZERLAND, highlighted its continued commitment to support institutional strengthening, with SWITZERLAND stressing the need to communicate this to the ExComm. JAPAN welcomed further discussion on the issue in a contact group. ARGENTINA stressed that the issue of institutional strengthening was political in nature and therefore warranted discussion by the MOP.

Delegates agreed to defer this issue to the contact group on the MLF for further consideration.

ENVIRONMENTALLY SOUND MANAGEMENT OF BANKS OF ODS

PRESENTATION OF THE FINAL ANALYSIS OF THE TASK FORCE OF THE TEAP: Co-Chairs Paul Ashford, Lambert Kuijpers and Paulo Vodianitskaia presented the final report of the TEAP task force on the management and destruction of ODS banks (UNEP/OzL.Pro.21/7). The main conclusions of the report included, *inter alia*: the collection, recovery and destruction of refrigerants of all types represents the most immediate and cost-effective method of mitigating climate impacts from the release of ODS banks; decisions to include ODS substitutes within the scope of end-of-life activities could increase the demand for destruction capacity to as much as 400,000-450,000 tonnes annually by 2030; and the potential funding of ODS bank management activities continues to receive significant attention. BRAZIL clarified that the information on Brazil contained in the TEAP report was not official data.

FURTHER CONSIDERATION OF WORK INITIATED BY THE OEWG-29: The US introduced a draft decision on destruction (CRP.2). The EU encouraged further analysis on, *inter alia*, ODS destruction and cost calculations. CHINA, INDONESIA and LIBERIA suggested that the issue of ODS banks be addressed as a matter of priority. JAPAN and CANADA said the US proposal presented a good basis for further discussion. BRAZIL emphasized the importance of destruction and of the support by the MLF for Article 5 countries. Delegates agreed to establish a contact group on the issue of ODS banks.

CONTACT GROUPS

HFCS: After an initial discussion on how the contact group would proceed, Co-Chair Sorenson noted that even though many parties did not want to immediately delve into a substantive discussion of the new amendment proposal by the US, Canada, and Mexico, there was a general interest in having it presented and discussed from a "conceptual viewpoint." Sorenson noted this approach would help clarify questions raised in plenary. Delegates also noted general interest in having a substantive discussion on the draft decisions on HFCs and HCFCs and a general discussion on the Secretariat's concept note on high global warming potential alternatives to ODS (UNEP/OzL.Pro.21/INF/3). Sorenson emphasized that throughout the week the contact group would continue to "adjust and adapt" the spirit in the room.

ODS BANKS: The contact group on ODS banks, co-chaired by Anne Gabriel (Australia) and Mazen Hussein (Lebanon), met in the evening. Delegates agreed to use the US proposal (CRP.2) as a basis for work and discuss it in the context of the outcomes of the OEWG contact group and issues raised in plenary.

IN THE CORRIDORS

As delegates gathered in the holiday resort of Port Ghalib on the shores of the Red Sea, many remarked there would be little time for enjoying the delights of the desert or the sea, due to a full substantive agenda. Some remarked that the initial exchange of views on phasing down HFCs was "sobering," with strong support for the HFC amendment proposals starkly juxtaposed against resistance to considering the issue at all. As work on the issue was deferred to a contact group, many delegates were unsure about how much progress could be made at MOP-21. One seasoned delegate recalled the work of MOP-19 in 2007 on the issue of HCFCs, at which many delegates doubted a decision on HCFC phase-out was possible. He said he had learned not to underestimate the Montreal Protocol.

MOP-21 HIGHLIGHTS

THURSDAY, 5 NOVEMBER 2009

The preparatory segment of MOP-21 convened for its second day in Port Ghalib, Egypt, on Thursday 5 November 2009.

In the morning, delegates discussed essential uses exemptions, methyl bromide related issues and other issues arising from the TEAP report. During the afternoon, delegates convened in contact groups on destruction, the MLF, and high global warming potential (GWP) alternatives. Delegates reconvened in plenary in the evening to consider compliance and data related issues and other matters.

ENVIRONMENTALLY SOUND MANAGEMENT OF BANKS OF ODS

FURTHER CONSIDERATION OF WORK INITIATED BY OEWG-29: COLOMBIA presented a draft decision on destruction (CRP.6), and explained that the proposal was developed as a result of discussions in the contact group on destruction. He provided an overview of the proposal, which requests the ExComm to: establish criteria to define the cost effectiveness of the recovery and destruction of ODS taking into account their impacts on ozone and climate; and use related documents to elaborate a proposal on a general strategy of the Protocol for destruction and the amounts of resources the MLF should provide to support national and regional strategies for Article 5 countries. The proposal was forwarded to the contact group on destruction for further consideration.

ISSUES RELATED TO ESSENTIAL-USE EXEMPTIONS

PROPOSAL ON NOMINATIONS FOR ESSENTIAL-USE EXEMPTIONS FOR 2010 AND 2011: Co-Chair Akhtar introduced this item, the report of the TEAP and the draft decision (UNEP/OzL.Pro.21/3, XXI/[H]). The US outlined its revised essential use nomination. PAKISTAN pointed at problems of sourcing CFCs for manufacturers of metered-dose inhalers (MDIs). MEXICO announced that it would not request essential use exemptions for 2010. IRAQ explained its government's plans for after January 2010. Delegates established a contact group to consider the issue.

CAMPAIGN PRODUCTION OF CFCs FOR MDIs:

Co-Chair Sirois introduced the item and Medical Technical Options Committee (MTOC). Co-Chair Helen Tope summarized the TEAP/MTOC report. She explained that, following the EC ban of bulk CFC exports from 1 January 2010, there was uncertainty of supply for some Article 5 countries and that the highest priority for continued MDI supply was to complete transition to CFC-free alternatives.

PAKISTAN stressed the need for more than one source of pharmaceutical grade CFC production in order to provide affordable and accessible treatment. The US noted the need for an adequate supply of CFCs for MDIs in Article 5 and non-Article 5 parties. The EU underscored its willingness to work

with Article 5 countries in a contact group. He clarified that the EU will not "suddenly" stop exporting CFCs in 2010, since this discussion was proposed in 2008. INDIA highlighted its desire to produce pharmaceutical grade CFCs to meet its own basic domestic needs, as well as those of other Article 5 parties. ARGENTINA noted interest in convening a contact group due to the importance of accessing sufficient quantities of CFCs for medical purposes. BANGLADESH highlighted the need to identify the grade of stockpiled CFCs and the amount of stockpiled pharmaceutical grade CFCs.

CONSIDERATION OF AMENDMENTS TO THE HANDBOOK ON ESSENTIAL-USE NOMINATIONS

(DECISION XX/3): Co-Chair Sirois introduced the agenda item. A number of countries requested the creation of a contact group, with CHINA noting the need to specifically discuss the supply of CFCs beyond 2010; the export of CFCs for MDIs; and how to further amend the handbook on essential-use nominations. A contact group co-chaired by Robyn Washbourne (New Zealand) and W.L. Sumathipala (Sri Lanka) was established to further consider the issue.

ISSUES RELATED TO METHYL BROMIDE

PRESENTATION BY THE TEAP: Mohamed Besri, MBTOC, reported on the final recommendations for critical use nominations for methyl bromide, saying that since 2005 there has been a decreasing the number of requests. He also said that while methyl bromide stocks for all parties have decreased, one party's stock is twice its critical use exemption (CUE). He then presented the MBTOC 2010 workplan. Ian Porter, MBTOC, provided an overview of the critical use nominations (CUNs) for soil uses, noting that in its final assessment seven of the CUNs were reassessed and 20 remain unchanged. He highlighted issues raised by 2009 CUN's, including that more restrictive regulations on the use of fumigant alternatives, especially chloropicrin and dichloropropene, are affecting methyl bromide reductions for several remaining CUN uses. Michelle Marcotte, MBTOC, provided an overview of CUNs for food processing structures and commodities, and highlighted the higher cost of alternatives as reason for stalled progress in achieving zero CUNs for methyl bromide in this sector.

CONSIDERATION OF NOMINATIONS FOR CRITICAL-USE EXEMPTIONS FOR 2010 AND 2011:

TEAP made a presentation on methyl bromide issues, including the Panel's final review of nominations for methyl bromide critical-use exemptions, and its final report on quarantine and pre-shipment (QPS) issues.

CANADA introduced a draft decision (CRP.5) on CUEs for methyl bromide for 2010 and 2011. CUBA, the EU and MEXICO urged the few countries still requesting nominations to reduce their use of methyl bromide. The US said it had reduced its nominations for methyl bromide stressing that the remaining nominations are critical. MALAYSIA advocated the

implementation of an integrated pest management approach. NATURAL RESOURCES DEFENSE COUNCIL called one party to use existing stocks of methyl bromide.

QPS APPLICATIONS OF METHYL BROMIDE:

Co-Chair Sirois introduced the item. Leslie Smith (Grenada), Co-Chair of the QPS workshop held on 3 November 2009, discussed, *inter alia*, information on the economic feasibility of alternatives in Article 5 countries. CHINA proposed that the MLF provide financial support and that developed countries provide technical assistance to developing countries. Co-Chair Sirois proposed that a contact group be established on CUEs and QPS and the US suggested starting negotiations on CUEs at the bilateral level.

The EU introduced the draft decision on QPS uses of methyl bromide (UNEP/OzL.Pro.21/CRP.7) and it was agreed to the CRP would be taken up by a contact group.

OTHER ISSUES ARISING OUT OF THE REPORT OF THE TEAP

ALTERNATIVES TO HCFCs IN THE

REFRIGERATION AND AIR-CONDITIONING SECTORS:

Co-Chair Akhtar introduced this item relating to parties operating under paragraph 1 of Article 5 with special conditions (decision XIX/8). KUWAIT, supported by OMAN, JORDAN and IRAQ, raised concerns about the availability of HCFC alternatives in countries with high ambient air temperature and the report's treatment of this issue.

The EU noted that while alternatives exist, these are mostly HFCs. He outlined bilateral work on this issue and said further work on alternatives was necessary. The GAMBIA highlighted the necessity for accessibility and affordability.

Co-Chair Akhtar suggested and delegates agreed that MOP-21 would take note of the report, request the TEAP to consider the above discussion, and revisit the issue at MOP-22.

PROJECTED REGIONAL IMBALANCES IN THE AVAILABILITY OF HALONS (DECISION XIX/16):

Co-Chair Akhtar introduced the item and a draft decision submitted by Australia, Canada, and the US (CRP.4). The EU noted that it supports the proposal in principle, but said some details required clarification. Delegates agreed to consult bilaterally.

PROPOSAL ON LABORATORY AND ANALYTICAL-USE EXEMPTIONS (DECISIONS XVII/10 AND XIX/18):

The EU noted it was in the process of updating its draft decision on this matter, delegates agreed to consult bilaterally and to return to this item later in the week.

PROPOSAL ON PROCESS AGENTS (DECISION

XVII/6): Co-Chair Akhtar introduced a draft decision submitted by the EU, Australia and Canada (UNEP/OzL.Pro.21/3/ Add.2, Annex 3). Delegates agreed to forward the decision to the high level segment.

FURTHER WORK ON CARBON TETRACHLORIDE

EMISSIONS: The EU introduced a revised proposal on carbon tetrachloride. ARGENTINA noted its observations had not been fully reflected and, with CHINA, agreed to consult directly with the EU, to revise the proposal.

ISSUES ARISING OUT OF TEAP REPORTS: Co-Chair Akhtar introduced the item and announced the proposed appointment of Roberto de Aguiar Peixoto (Brazil) to the Refrigeration, Air Conditioning and Heat Pumps TOC. Delegates endorsed the proposal and requested the Secretariat prepare a draft decision reflecting this.

COMPLIANCE AND DATA REPORTING ISSUES

TREATMENT OF STOCKPILED ODS RELATIVE TO

COMPLIANCE: The EU introduced the draft decision on stockpiling relative to compliance. CANADA, AUSTRALIA, and CHINA supported the draft decision, with CHINA asking for clarification of some issues.

RECOMMENDED DECISIONS OF THE

IMPLEMENTATION COMMITTEE: Robyn Washbourne (New Zealand), Chair of the Implementation Committee, presented draft decisions (UNEP/OzL.Pro.21/CRP.1), which the

OTHER MATTERS

INDONESIA introduced the draft decision on difficulties faced by Timor-Leste in compliance (UNEP/OzL.Pro.21/CRP.3) and the plenary forwarded it with minor amendments to the high-level segment for consideration.

CONTACT GROUPS

HIGH GWP ALTERNATIVES: The contact group, co-chaired by Laura Berón (Argentina) and Mikkel Sørensen (Denmark), convened to discuss the North American amendment proposal and the text of the draft decision on HCFCs (UNEP/OzL.Pro.21/3, XXI/[I]).

The US discussed technical, financial, and political and legal issues of the proposal which had been raised during previous discussions. He emphasized that the proposal was put forward to provide significant climate protection benefits and noted that the legal rationale behind the amendment proposal stems from the Montreal Protocol's unique role in promoting HFCs as the main alternative to ODS. Parties then raised questions on, *inter alia*: the criteria for the list of substances; the timeline for HFC phase-down; whether the MLF would be the sole financial mechanism to facilitate the phase-down; the environmental benefits from this proposal compared to the benefits accrued under the Kyoto Protocol; a possible bias to certain parties due to baseline calculations; and how to address HFC-23. While most parties expressed interest in better understanding the proposal, a couple maintained that the amendment was beyond the purview of the Protocol and preferred ending the discussions. Delegates agreed to continue the discussion later in the meeting.

Delegates also discussed the bracketed text in the draft decision on HCFCs. Delegates reached consensus on the need for the Scientific Assessment Panel, TEAP and the Environmental Effects Assessment Panel, to comprehensively assess the impact of alternatives to HCFCs on the environment, particularly on the climate, as part of the 2010 assessment, and for the outcomes to be included in the synthesis report of the three assessment panels. Discussion on the decision will continue in the group's next meeting.

ODS BANKS: Delegates discussed two operative paragraphs of the US proposed CRP.2 concerning a seminar on how to mobilize funds and a request to the ExComm regarding the export and destruction of ODS in low volume consuming countries.

MULTILATERAL FUND: This contact group, co-chaired by David Omotosho (Nigeria) and Gudi Alkemade (Netherlands), considered the draft decision (UNEP/OzL.Pro.21/3, XXI/[E]) on the evaluation of the financial mechanism and agreed to remove reference to a proposal to hold a one-day workshop on the terms of the reference of the evaluation.

The group also discussed GRULAC's proposal on institutional strengthening (UNEP/OzL.Pro.21/3, XXI/[F]). Delegates discussed the proposed operative paragraph on institutional strengthening, with some expressing their wish for a political message from the MOP to the ExComm. Others suggested that ExComm decisions are of a technical, not a political nature. At the suggestion of Co-Chair Alkemade, delegates agreed to consider elements of a potential political message to the ExComm.

One developed country proposed language urging the ExComm to finalize its consideration of funding for institutional strengthening as expeditiously as possible. A developing country proposed reference to extending funding for institutional strengthening beyond 2010, and another country proposed increasing funding. Discussions will continue on Friday.

IN THE CORRIDORS

As the HFC contact group struggled to agree if HFC phase-down should be discussed, or not, delegates winced at the prospect of a slow and grueling week ahead. Others had their ears to their phones, discussing matters with colleagues at the Barcelona Climate Change Talks. Apparently the EU suggestion of tasking the Montreal Protocol to phase-down HFCs during informals, was received with reticence.

MOP-21 HIGHLIGHTS

FRIDAY, 6 NOVEMBER 2009

The preparatory segment of MOP-21 convened for its third day in Port Ghalib, Egypt, on Friday, 6 November 2009.

In the morning and afternoon, delegates convened in contact groups to address outstanding substantive matters. Delegates reconvened in plenary in the evening to consider draft decisions for forwarding to the high level segment.

OTHER ISSUES ARISING OUT OF THE REPORT OF THE TEAP

PROPOSAL ON LABORATORY AND ANALYTICAL USE EXEMPTIONS (DECISIONS XVII/10 AND XIX/18):

The draft decision on global laboratory and analytical use exemption submitted by Australia, the EU and the US (UNEP/OzL.Pro.21/CRP.9/Rev.1) was forwarded to the high level segment.

FURTHER WORK ON CTC EMISSIONS: The EU said that agreement had been reached. Co-Chair Sirois said that the draft decision would be made available to delegates for review before forwarding it to the high level segment.

PROJECTED REGIONAL IMBALANCES IN THE AVAILABILITY OF HALONS (DECISION XIX/16):

Regarding the draft decision submitted by Australia, Canada, and the US (UNEP/OzL.Pro.21/CRP.4), the US reported that it was still consulting with the EU.

COMPLIANCE AND DATA REPORTING ISSUES

TREATMENT OF STOCKPILED ODS RELATIVE TO COMPLIANCE: The EU said little progress had been made on the issue but that they would continue to work on a proposal of how to move the issue forward.

ISSUES RELATED TO ESSENTIAL USE EXEMPTIONS

CONSIDERATION OF AMENDMENTS TO THE HANDBOOK ON ESSENTIAL-USE NOMINATIONS

(DECISION XX/3): Co-Chair Sirois said that this issue was still being debated in the contact group.

PROPOSAL ON NOMINATIONS FOR ESSENTIAL-USE EXEMPTIONS FOR 2010 AND 2011: The RUSSIAN FEDERATION introduced a draft decision on essential-use exemptions for CFC-113 for aerospace applications (UNEP/OzL.Pro.21/CRP.10). Co-Chair Sirois suggested and delegates agreed that the draft decision be considered by the contact group on essential-use exemptions.

CONTACT GROUPS

HIGH GWP ALTERNATIVES: The contact group, co-chaired by Laura Berón (Argentina) and Mikkel Sørensen (Denmark), met in the morning and afternoon to further discuss the draft decision on HCFCs (UNEP.OzL.Pro.21/3, XXI/[I]), and begin discussing the draft decision on HFCs (UNEP.OzL.Pro.21/3, XXI/[J]). Much of the group's discussion focused on the proposed HCFC decision, notably its sixth operative paragraph on projects and programmes regarding the phase-out of HCFCs. Delegates grappled with: making a feasible request to the ExComm considering that it would be meeting the week following MOP-21; constructing the text so that it takes into consideration paragraph 11 of decision XIX/6 on the priority for cost-effective projects and programmes; and simplifying the text.

During these discussions, many parties requested the entire text of paragraph six remain bracketed, although there seemed a general consensus emerging on the text. Parties wished to ensure that the wording matched that used in paragraph 11 of decision XIX/6; and to undertake a final examination of the text once the wording is changed. A few developing countries then suggested new sub-paragraphs on the need for the ExComm to: provide adequate funding for preparing and implementing demonstration projects on HCFCs alternatives particularly for air conditioning application in high ambient temperature areas considering other climate and environmental benefits; and consider and approve demonstration and pilot projects in air conditioning and refrigeration sectors that apply environmentally sound alternatives to HCFCs. A large developing country requested, and delegates agreed, to include a paragraph requesting parties to review and amend the policies and standards which prevent the use and application of products with low GWP alternatives to ODS. One country's proposed text on examining HFC consumption and the availability of low GWP alternatives as a central component of their HCFC Phase-Out Management Plan was moved to the draft decision on HFCs.

Parties then turned their attention to the HFC proposal. During the introduction of the text, the US, noting that it may not be possible to pass the proposed amendment to the Montreal Protocol on a HFC phase-down, withdrew the North American amendment from being considered further and, instead, proposed stronger language to be inserted into the decision on HFCs. The text includes language on, *inter alia*: spotlighting the Montreal Protocol as the appropriate instrument to address production and consumption phase-down of HFCs; convening an extraordinary MOP (ExMOP) in the margins of OEWG-30 to further consider

the proposed amendments; and carrying forward the amendment proposal from Mauritius and FSM and the modification from Canada, Mexico and the US for consideration by the parties during the 2010 meetings of the Montreal Protocol. A few developing countries preferred HFCs not be discussed at all. The contact group agreed to reconvene on Saturday.

ODS BANK DESTRUCTION: The contact group on destruction, co-chaired by Anne Gabriel (Australia) and Mazen Hussein (Lebanon), convened in the morning and continued work on a draft decision on destruction (CRP.2) submitted by the US. Delegates discussed a request to the TEAP to review destruction technologies and report to the OEWG on their commercial availability. Some delegates suggested that TEAP also focus on other issues, including the impact of these technologies on environment, health and energy efficiency. Others warned against duplicating work already undertaken in the 2002 TEAP report. Delegates agreed to request the TEAP to report to the OEWG on both the commercial and technical availability of technologies.

The group also discussed a paragraph proposing to include the issue of a special facility to promote climate benefits on the agenda of OEWG-30, saying it would help address policy issues. Several delegates underscored the need to continue deliberations in the ExComm to develop options that could then be discussed in the OEWG. Delegates agreed to discuss potential parallel track efforts in bilateral discussions.

The group then turned to CRP.6 submitted by Colombia. Delegates discussed a proposed request to the MLF to establish criteria to define the cost-effectiveness of ODS destruction that takes into account impacts on ozone and climate. Some participants pointed at the lack of data and experience on this issue. Delegates agreed to continue discussions on cost effectiveness and the Colombian proposal later in the week.

MULTILATERAL FUND: This contact group, co-chaired by David Omotosho (Nigeria) and Gudi Alkemade (Netherlands), continued consideration of the draft decision (UNEP/OzL.Pro.21/3, XXI/[F]) on institutional strengthening. Brazil introduced new text on behalf of GRULAC and the AFRICAN GROUP, and delegates agreed to discuss the issue on the basis of this text. The language proposed that the MOP “extend and increase” the level of financial support for institutional strengthening and recommended that the ExComm consider institutional strengthening requirements as a “stand alone project.” The proposal attracted a robust discussion with several developed countries suggesting that, as opposed to moving the process forward, the proposal backtracked to the discussion at OEWG-29. Many developed countries stressed the need for a political statement to the ExComm and were reluctant to dictate or micro-manage activities of the body. Developing countries highlighted that since agreement was not achieved at the ExComm’s last meeting, the MOP needs to instruct the ExComm on the issue. Regarding the MOP supporting the extension of institutional strengthening beyond 2010, developing countries advocated for reference to “at current levels.” In response, one developing country party suggested qualifying this with “for one year,” or removing reference to funding levels. No agreement was reached, and the group agreed to continue its discussion later in the meeting.

METHYL BROMIDE: Co-chaired by Federica Fricano (Italy) and Leslie Smith (Grenada), the contact group discussed the draft decision on QPS uses submitted by the EU (CRP.7). The EU outlined the draft decision, requesting consideration at MOP-22 of the establishment of a freeze and cap on methyl bromide production and consumption for QPS, and to further

consider the phase-out of specific uses of methyl bromide for QPS in areas where alternatives are technically and economically feasible. One developed country and several developing country parties opposed freezing and setting a cap on methyl bromide for QPS because applicable alternative technologies are not available. Several parties said they need time to consider the issue and to consult among different government agencies and stakeholders in their countries on this draft decision before taking a position. Several developing country parties said they could not accept this draft decision. A few developed country parties supported the draft in general, but said that amendments were necessary. Delegates then discussed a paragraph on an ODS licensing system and procedures for registering data on QPS uses of methyl bromide, deferring the paragraph on the freeze and cap to later in the week.

BUDGET COMMITTEE: Co-chaired by Ives Gomez (Mexico) and Alessandro Giuliano (Peru), the budget committee had a first round discussion on a draft decision. In the draft decision, MOP-21 approves the revised 2009 budget in the amount of US\$5,329,104, and the 2010 budget in the amount of US\$4,948,398 and takes note of the proposed budget of US\$4,935,639 for 2011. The parties are yet to agree on the exact level of the budgets for 2010 and 2011.

The group agreed on a paragraph urging all parties to pay their outstanding contributions as well as their future contributions promptly and in full.

IN THE CORRIDORS

Discussions over morning coffee were focused on the “easy-going” discussion over institutional strengthening in the contact group on Thursday. Several wondered how this issue, so contentious at OEWG-29, could have silently slid from the table. However as the contact group reconvened on Friday afternoon, it was clear significant overnight coordination had occurred, as the contact group quickly returned to divergent positions over whether to provide direction to the ExComm to extend and increase institutional strengthening funding.

Mid-afternoon, the issue on delegates’ lips as they passed from one contact group to another was movement, or lack thereof, on HFCs. Many questioned some parties’ insistence on cost effectiveness for HCFC alternatives, when a cost effectiveness approach has been shown to lead to increased conversions to HFCs, and therefore does not support the proposed phase-down of HFCs. Some delegates contended this was perhaps a negotiating strategy to avoid financing for HFC phase-down by way of a huge replenishment of the MLF in the case that the amendment was approved.

As delegates were scratching their chins over this issue, jaws dropped as the HFC amendment proposal was abruptly removed from the negotiating table. Murmurs throughout the room indicated the removal came as a surprise to most, with some contending that bilateral discussions between proponents and major industrializing nations had been unsuccessful. As the amendment proposal was replaced with an addition to the proposed draft decision on HFCs proposing to convene an ExMOP in parallel with OEWG-30 to again consider the proposed amendments, the intractability of positions was palpable.

As participants packed up for the night and headed out to see a Beyoncé performance on the Island at Port Ghalib, many hoped that the excitement and rhythm of the music would bring delegates together, especially since the Montreal Protocol’s ability to heal the holes in the atmosphere is “Irreplaceable.”

MOP-21 HIGHLIGHTS:

SATURDAY, 7 NOVEMBER 2009

MOP-21 to the Montreal Protocol convened for its fourth day in Port Ghalib, Egypt, on Saturday, 7 November 2009.

In the morning, delegates attended the opening of the high level segment. Delegates then convened in plenary throughout the day to hear presentations by heads of delegations.

Contact groups on destruction, methyl bromide, high GWP alternatives, the MLF, and budget met throughout the day.

OPENING OF THE HIGH LEVEL SEGMENT

MOP-20 President Róbert Tóth (Hungary) thanked the governments for their tireless efforts to implement the treaty and looked forward to progress on HFC.

Marco González, Executive Secretary of the Ozone Secretariat, delivered a message on behalf of UNEP Executive Director Achim Steiner, saying that the Montreal Protocol's collaboration with the International Plant Protection Convention and the UNFCCC showed the Protocol's maturity and illuminated the variety of avenues available to tackle climate change.

Maged George, Minister for Environmental Affairs, Egypt, officially opened the high level segment, outlined Egypt's efforts on ozone protection and emphasized the importance of international cooperation.

González congratulated parties on the universal ratification of the Vienna Convention and Montreal Protocol, noting it as the only treaty to achieve this accomplishment.

ORGANIZATIONAL MATTERS

MOP-21 elected by acclamation Michael Church (Grenada) as President, and Patrick McInery (Australia), Kamran Lashari (Pakistan), and Ramadhan Kajembe (Kenya) as Vice Presidents, and Azra Rogović-Grubić as Rapporteur. President Church urged all delegations that have not submitted their credentials should do so as soon as possible.

STATUS OF RATIFICATION

President Church noted that on 16 September the ozone treaties became the first environmental treaties with universal ratification, and he urged all the parties that have not ratified the amendments to the Montreal Protocol to do so as soon as possible.

PRESENTATIONS BY ASSESSMENT PANELS

Environmental Effects Assessment Panel Co-chair Janet Bornman (Denmark) presented on environmental effects of ozone depletion and its interactions with climate change from the Panel's Progress Report 2009, including status of ozone and UV radiation reaching Earth, and effects on human health, terrestrial ecosystems, aquatic ecosystems, biogeochemical cycles, air quality and materials.

The TEAP Co-Chairs Lambert Kuijpers (Netherlands) and Stephen Anderson (US), updated delegates on the content of the TEAP report scheduled for completion at the end of 2010, and outlined the content of each TOC report.

PRESENTATION BY THE MULTILATERAL FUND

ExComm Chair Husamuddin Ahmadzai (Sweden) discussed the key achievements of the ExComm and its implementation agencies. He noted that the ExComm had been considering the technical and policy matters of addressing the climate and energy aspects of reducing ODS as called for in decision XIX/6. He described a potential special facility for additional income which might cover costs to maximize the climate and environmental benefits.

STATEMENTS BY HEADS OF DELEGATIONS

IRAN stressed the need for pharmaceutical grade CFCs for MDIs, and that viable alternatives for methyl bromide QPS must be identified. CUBA stressed that the Ozone and UNFCCC Secretariats should work together to enable developing countries to get the technical and financial assistance required. IRAQ highlighted the need for further consideration of alternatives for high ambient temperature countries. FIJI, also on behalf of the COOK ISLANDS and TONGA, stressed the need for continued institutional strengthening. Explaining that there are several challenges in phasing out HCFCs, INDIA urged the ExComm to resolve pending issues. MALAYSIA said that the debate on HFC phase-out was premature as alternatives did not exist in many applications. The DOMINICAN REPUBLIC explained that while it did not support the North American proposal on HFCs, a broad review of HFCs was necessary. CANADA explained that HFC use is a consequence of HCFC phase-out and urged parties to rise to the challenge of phasing down HFCs.

CHINA highlighted the importance of the phase-out of HCFCs, called on the developed countries to provide adequate funds, and hoped this meeting would provide a signal to the Copenhagen conference to prioritize HFCs. The EU urged parties to continue to make efforts not only to protect the ozone layer, but also the climate, and favoured expeditious efforts to control HFCs, and achieve synergies with UNFCCC.

As the final party to the ozone treaties, TIMOR LESTE committed to working together with all the parties in achieving a more sustainable world. BURKINA FASO expressed his country's dedication to phase out ODS and fight global warming. PAKISTAN highlighted the importance of scientific research in finding alternatives, financial resources and technical assistance.

The US emphasized that the MLF had been at the core of the Protocol's success and said emerging challenges included how to use MLF as seed-money to obtain climate investments from other sources. SAUDI ARABIA expressed concerns about

restrictions imposed on HFCs, which not long ago, had been considered as available alternatives for ODS. KUWAIT said deliberations appeared to have become disorientated by focusing on activities outside the scope of the Montreal Protocol, while HCFC phase-out is yet to be completed.

CROATIA highlighted that phasing out ODS has been progressing in line with the Montreal Protocol targets and noted the need to improve systems for the recovery, recycling and destruction of ODS in an economically viable way.

ANGOLA provided an overview of national programs aimed at eliminating ODS. UGANDA highlighted the challenge of controlling the use of second hand products and equipment whose functioning relies on ODS, and emphasized the need for technology transfer.

BANGLADESH said his country is still facing the escalating problem of need for CFCs for MDI. MADAGASCAR called on developed countries for financial support.

SERBIA supported the proposals to control HFCs under the Montreal Protocol. FSM stressed the importance and urgency for controlling HFCs and need to amend the Montreal Protocol to deal with the issue. The PHILIPPINES introduced its efforts and achievements in phasing out ODS, and supported phase-down of HFCs.

Reporting on his country's progress in phasing out ODS, MALAWI pointed to a lack of alternatives to HCFCs and problems of access to destruction technologies. MOZAMBIQUE highlighted implementation difficulties in phasing out ODS and called for increased financial and technical support. YEMEN regretted slow progress on HCFC phase-out and called on the ExComm and the MLF to pay special attention to countries in high ambient air temperature regions. ZIMBABWE said facilities for the environmentally sound destruction of ODS banks should be available in all regions. ANDORRA outlined national activities to protect the ozone layer and supported the regulation of HFCs under the Montreal Protocol.

INDONESIA highlighted the need for financial and technical assistance to Article 5 countries and the importance of participation of local people in implementation. TAJIKISTAN outlined challenges faced by his country, including economic difficulties and illegal trade of ODS.

CONTACT GROUPS

BUDGET COMMITTEE: Parties agreed to add an amount of up to US\$400,000 to the budget to accommodate the activities under discussion by MOP-21 such as workshops and an ExMOP. A footnote was added to the budget to the effect that the additional funds are not available to be re-programmed to other activities. With this, the group agreed to the budget decision.

MULTILATERAL FUND: This contact group continued consideration of the draft decision on institutional strengthening. After extensive discussion, delegates reached agreement on both preambular and operative paragraphs. The draft decision includes three operative paragraphs on: urging the ExComm to extend financial support for institutional strengthening funding for Article 5 parties beyond 2010; to finalize consideration of funding for institutional strengthening projects as expeditiously as possible, taking into account current and emerging challenges; and recommends that the ExComm does not require that institutional strengthening funding be incorporated within funding for the HPMP only, but allows flexibility for an Article 5 party to do so if it so chooses.

DESTRUCTION OF ODS BANKS: The contact group met in the morning to further discuss CRP.6 submitted by Colombia. Discussions first focused on whether to request the ExComm to generate more information through further pilot projects. Several developed countries said this was not necessary as decision XX/7 did not limit the number of pilot projects. One party expressed concern that the HCFC phase-out already implied costs, and emphasized that compliance activities have priority. Several developing countries said the ExComm should not be

requested to consider destruction projects only in low volume consuming countries, as proposed in the US decision (CRP.2), but in all Article 5 countries. Discussions then moved to whether the ExComm should be requested to elaborate a proposal on a general strategy of the Montreal Protocol for destruction and on the amounts of MLF resources that should be provided. Several developed countries said the goal of such a strategy was unclear and preferred a learning-by-doing approach. Delegates agreed to meet on Sunday morning in a final attempt to agree on a draft decision.

HIGH GWP ALTERNATIVES: The contact group met in the afternoon and evening to discuss a merged version of the draft decision on HFCs (UNEP.OzL.Pro.21/3, XXI/[J]), although the title was changed to "High GWP Alternatives" to reflect a number of parties' aversion to discussing HFCs. The draft synthesized the text forwarded from OEWG-29 and the US proposed language.

Delegates engaged in a protracted debate on whether HFCs exist within the ambit of Montreal Protocol or reside solely in the UNFCCC's domain. A number of developing countries maintained the position not to pre-judge the Copenhagen discussions in December by considering HFCs at MOP-21. One of them related the UNFCCC as the parent of a "bad child," saying the concerned neighbor, the Montreal Protocol, needs to ask "permission from the parent" before it could help, and refusing to ask permission would undermine confidence in the UNFCCC. A developed country retorted that "if a parent's actions are the cause for a child's misbehavior, shouldn't the parent (the Montreal Protocol this time), examine their actions and see how to modify them to repair the damage." One developed country made an emotional plea, reminding delegates they are here to help save the world and the largest current threat is climate change, which may be too large to be addressed solely through the UNFCCC. Others were more quantitative in their approach, citing previous decisions within the Montreal Protocol in which high GWP alternatives, notably HFCs, were discussed.

Behind the seemingly intractable positions, however, was a thread of agreement linking delegations. All parties agreed that concern exists over the projected growth of climate-forcing HFCs and said the UNFCCC should examine this. Delegates began clinging to this "lowest common denominator" in hopes of moving discussions forward on the draft decision, with one suggesting it be the cornerstone on which to build the draft decision.

METHYL BROMIDE: The group discussed the draft decision on CUEs for methyl bromide for 2010 and 2011 (CRP.5). Agreement was reached on the paragraph regarding reporting of stocks and other information, and delegates agreed to resolve the issue of quantities through bilateral consultations. The group also discussed the draft decision on QPS uses of MB (CRP.7) and reached consensus on many elements. Discussions will continue on Sunday.

IN THE CORRIDORS

As deliberations in the contact group on high GWP alternatives continued late into the evening, those wandering the corridors were speculating on the potential for any outcome on the issue. As observers mulled over a certain shift in power among parties in recent years, whispers of a draft declaration on the need to address HFCs also circulated. Some speculated that 50 to 100 parties may sign on, paving the way to reconsideration of the HFC issue at OEWG-30 and MOP-22.

ENB SUMMARY AND ANALYSIS: The *Earth Negotiations Bulletin* summary and analysis of MOP-21 will be available on Wednesday, 11 November 2009 online at: <http://www.iisd.ca/ozone.mop21>

SUMMARY OF THE 21ST MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER: 4-8 NOVEMBER 2009

The twenty-first Meeting of the Parties (MOP-21) to the Montreal Protocol on Substances that Deplete the Ozone Layer took place in Port Ghalib, Egypt, from 4-8 November 2009. The meeting was attended by over 400 participants representing governments, UN agencies, intergovernmental and non-governmental organizations, academia, industry and the agricultural sector.

MOP-21 opened with a preparatory segment from Wednesday to Friday, 4-6 November, which addressed the MOP's substantive agenda items and related draft decisions. This was followed by a high-level segment, which convened on Saturday and Sunday, 7-8 November, and adopted the decisions forwarded to it by the preparatory segment. Since the preparatory segment did not conclude its work on a number of contentious issues by Friday, it reconvened several times during the high-level segment to address outstanding issues.

MOP-21 adopted 30 decisions, including on: alternatives to hydrochlorofluorocarbons (HCFCs); institutional strengthening; essential uses; environmentally sound management of banks of ozone depleting substance (ODS); methyl bromide; budget; and data and compliance issues. Despite an extensive agenda, the hard work of delegates in plenary, contact groups and informal bilateral discussions led to the resolution of most items, and enabled the meeting to conclude, as scheduled, on Sunday evening. Although the proposal to amend the Montreal Protocol to include hydrofluorocarbons (HFCs) was unsuccessful, delegates expressed satisfaction that some progress had been made on the issue and predicted that it would continue to be considered at future meetings of the Protocol.

A BRIEF HISTORY OF THE OZONE REGIME

Concerns that the Earth's stratospheric ozone layer could be at risk from chlorofluorocarbons (CFCs) and other anthropogenic substances were first raised in the early 1970s. At that time, scientists warned that the release of these substances into the atmosphere could deplete the ozone layer, hindering its ability to prevent harmful ultraviolet rays from reaching the Earth.

This would adversely affect ocean ecosystems, agricultural productivity and animal populations, and harm humans through higher rates of skin cancers, cataracts and weakened immune systems. In response to this growing concern, the United Nations Environment Programme (UNEP) convened a conference in March 1977 that adopted a World Plan of Action on the Ozone Layer and established a Coordinating Committee to guide future international action on ozone protection.

VIENNA CONVENTION: In May 1981, the UNEP Governing Council launched negotiations on an international agreement to protect the ozone layer and, in March 1985, the Vienna Convention for the Protection of the Ozone Layer was adopted. The Convention called for cooperation on monitoring, research and data exchange, but did not impose obligations to reduce the use of ozone-depleting substances (ODS). The Convention now has 196 parties.

MONTREAL PROTOCOL: In September 1987 efforts to negotiate binding obligations to reduce the use of ODS led to the adoption of the Montreal Protocol on Substances that Deplete the Ozone Layer. The Protocol introduced control measures for some CFCs and halons for developed countries (non-Article 5 parties). Developing countries (Article 5 parties) were granted a grace period allowing them to increase their use of these ODS before taking on commitments. The Protocol currently has 196 parties.

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Since 1987, several amendments and adjustments to the Protocol have been adopted, adding new obligations and additional ODS, and adjusting existing control schedules. Amendments require ratification by a defined number of parties before they enter into force, while adjustments enter into force automatically.

LONDON AMENDMENT AND ADJUSTMENTS:

Delegates to the second Meeting of the Parties (MOP-2), which took place in London, UK, in 1990, tightened control schedules and agreed to add ten more CFCs to the list of ODS, as well as carbon tetrachloride (CTC) and methyl chloroform. To date, 193 parties have ratified the London Amendment. MOP-2 also established the Multilateral Fund (MLF), which meets the incremental costs incurred by Article 5 parties in implementing the Protocol's control measures and finances clearinghouse functions, including technical assistance, information, training, and the costs of the MLF Secretariat. The Fund is replenished every three years, and has received pledges of over US\$2.8 billion since its inception.

COPENHAGEN AMENDMENT AND ADJUSTMENTS:

At MOP-4, held in Copenhagen, Denmark, in 1992, delegates tightened existing control schedules and added controls on methyl bromide, hydrobromofluorocarbons and hydrochlorofluorocarbons (HCFCs). MOP-4 also agreed to enact non-compliance procedures and to establish an Implementation Committee. The Implementation Committee examines cases of possible non-compliance by parties, and makes recommendations to the MOP aimed at securing full compliance. To date, 190 parties have ratified the Copenhagen Amendment.

MONTREAL AMENDMENT AND ADJUSTMENTS: At MOP-9, held in Montreal, Canada, in 1997, delegates agreed to a new licensing system for the import and export of ODS, in addition to tightening existing control schedules. They also agreed to ban trade in methyl bromide with non-parties to the Copenhagen Amendment. To date, 178 parties have ratified the Montreal Amendment.

BEIJING AMENDMENT AND ADJUSTMENTS: At MOP-11, held in Beijing, China, in 1999, delegates agreed to controls on bromochloromethane and additional controls on HCFCs, and to reporting on methyl bromide for quarantine and preshipment (QPS) applications. At present, 160 parties have ratified the Beijing Amendment.

MOP-15 AND FIRST EXTRAORDINARY MOP: MOP-15, held in Nairobi, Kenya, in 2003, resulted in decisions on issues including the implications of the entry into force of the Beijing Amendment. However, disagreements surfaced over exemptions allowing the use of methyl bromide beyond 2004 for critical uses where no technically or economically feasible alternatives were available. Delegates could not reach agreement and took the unprecedented step of calling for an "extraordinary" MOP. The first Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP-1) took place in March 2004, in Montreal, Canada. Parties agreed to critical-use exemptions (CUEs) for methyl bromide for 2005 only. The introduction of a "double-cap" concept distinguishing between old and new production of methyl bromide was central to this compromise. Parties agreed to a cap on new production of 30% of parties' 1991 baseline levels, meaning that where the capped amount was insufficient for approved critical uses in 2005, parties were required to use existing stockpiles.

MOP-16 AND EX-MOP2: MOP-16 took place in Prague, the Czech Republic, in November 2004. Work on methyl bromide exemptions for 2006 was not completed and parties decided to hold a second Ex-MOP. ExMOP-2 was held in July 2005, in Montreal, Canada. Parties agreed to supplementary levels of CUEs for 2006. Under this decision, parties also agreed that: CUEs allocated domestically that exceed levels permitted by the MOP must be drawn from existing stocks; methyl bromide stocks must be reported; and parties must "endeavor" to allocate CUEs to the particular use categories specified in the decision.

COP-7/MOP-17: MOP-17 was held jointly with the seventh Conference of the Parties to the Vienna Convention (COP-7) in Dakar, Senegal, in December 2005. Parties approved essential-use exemptions for 2006 and 2007, supplemental CUEs for 2006 and CUEs for 2007, and production and consumption of methyl bromide in non-Article 5 parties for laboratory and analytical critical uses. Other decisions included the replenishment of the MLF with US\$470.4 million for 2006-2008, and agreement on terms of reference for a feasibility study on developing a monitoring system for the transboundary movement of controlled ODS.

MOP-18: MOP-18 took place in New Delhi, India, from 30 October - 3 November 2006. Parties adopted decisions on, *inter alia*: future work following the Ozone Secretariat's workshop on the Special Report of the Intergovernmental Panel on Climate Change and the Technology and Economic Assessment Panel (TEAP); difficulties faced by some Article 5 parties manufacturing CFC-based metered dose inhalers (MDIs); treatment of stockpiled ODS relative to compliance; and a feasibility study on developing a system for monitoring the transboundary movement of ODS.

MOP-19: MOP-19 took place in Montreal, Canada, in September 2007. Delegates adopted 29 decisions, including on: an accelerated phase-out of HCFCs; essential-use nominations and other issues arising out of the 2006 reports of the TEAP; critical-use nominations for methyl bromide; and monitoring transboundary movements and illegal trade in ODS.

COP-8/MOP-20: MOP-20 was held jointly with COP-8 of the Vienna Convention in Doha, Qatar in November 2008. Parties agreed to replenish the MLF with US\$490 million for 2009-2011 and adopted other decisions concerning, *inter alia*: the environmentally-sound disposal of ODS; approval of 2009 and 2010 CUEs for methyl bromide; and compliance and reporting issues. This meeting was also the Protocol's first paperless meeting.

OPEN-ENDED WORKING GROUP: The twenty-ninth meeting of the Montreal Protocol's Open-ended Working Group (OEWG-29) convened in Geneva, Switzerland from 15-18 July 2009. Delegates considered several issues arising from the 2009 Progress Report of the TEAP, as well as the treatment of stockpiled ODS relative to compliance, a proposed evaluation of the MLF, and institutional strengthening of national ozone units. OEWG-29 also considered a proposal by Mauritius and the Federated States of Micronesia to amend the Montreal Protocol to collect and destroy ODS banks and to regulate the phase-down of HFCs. OEWG-29 was preceded by the Workshop on the Environmentally Sound Management of Banks of ODS, held 13 July 2009, and the Dialogue on High Global Warming Potential (GWP) ODS Alternatives, held 14 July 2009.

CURRENT ODS CONTROL SCHEDULES: Under the amendments to the Montreal Protocol, non-Article 5 parties were required to phase out production and consumption of: halons by 1994; CFCs, CTC, hydrobromochlorofluorocarbons and methyl chloroform by 1996; bromochloromethane by 2002; and methyl bromide by 2005. Article 5 parties were required to phase out production and consumption of hydrobromochlorofluorocarbons by 1996 and bromochloromethane by 2002. Article 5 parties must still phase out: production and consumption of CFCs, halons and CTC by 2010; and methyl chloroform and methyl bromide by 2015. Under the accelerated phase-out of HCFCs adopted at MOP-19, HCFC production and consumption by non-Article 5 countries was to be frozen in 2004 and phased out by 2020, while in Article 5 parties, HCFC production and consumption is to be frozen by 2013 and phased out by 2030 (with interim targets prior to those dates, starting in 2015 for Article 5 parties). There are exemptions to these phase-outs to allow for certain uses lacking feasible alternatives.

MOP-21 REPORT

PREPARATORY SEGMENT

On Wednesday morning, 4 November 2009, the twenty-first Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP-21) preparatory segment was opened by preparatory segment Co-Chair Maqsood Muhammad Akhtar (Pakistan).

Maged George, Minister for Environmental Affairs, Egypt, welcomed participants, emphasizing that the Montreal Protocol was one of the most successful international environmental agreements, and that the aim of this meeting was to further increase its effectiveness.

Marco González, Executive Secretary, Ozone Secretariat, highlighted achievements made by the ozone treaties marked by universal ratification and phase-out of ozone depleting substance (ODS). He noted the heavy agenda and outlined the major items requiring consideration at MOP-21, including: destruction of ODS banks; a proposal to amend the Protocol to include hydrofluorocarbons (HFCs); alternatives to hydrochlorofluorocarbons (HCFCs) in the refrigeration and air-conditioning sectors; quarantine and preshipment exemptions; and matters related to the financial mechanism.

Co-Chair Martin Sirois (Canada) introduced the agenda (UNEP/OzL.Pro 21/1) together with the organization of work. It was adopted with minor amendments.

Throughout MOP-21, delegates discussed agenda items and corresponding draft decisions in plenary, contact groups and bilateral consultations. Rather than addressing agenda items in numerical order, issues likely to lead to the establishment of contact groups were addressed first, in an effort to ensure as little overlap between contact groups as possible. Draft decisions were approved by the preparatory segment and forwarded to the high-level segment for adoption on Sunday afternoon. The description of the negotiations, the summary of the decisions and other outcomes can be found below.

HIGH-LEVEL SEGMENT

On Saturday morning delegates attended the opening of the high-level segment. MOP-20 President Róbert Tóth (Hungary) thanked the governments for their tireless efforts to implement the treaty and looked forward to progress on HFCs.

Marco González, Executive Secretary of the Ozone Secretariat, delivered a message on behalf of UNEP Executive Director Achim Steiner, saying that the Montreal Protocol's collaboration with the International Plant Protection Convention and the United Nations Framework Convention on Climate Change (UNFCCC) showed the Protocol's maturity and illuminated the variety of avenues available to tackle climate change.

Maged George, Minister for Environmental Affairs, Egypt, officially opened the high-level segment, outlined Egypt's efforts on ozone protection and emphasized the importance of international cooperation.

González congratulated parties on the universal ratification of the Vienna Convention and Montreal Protocol, noting they are the only treaties to achieve this.

MOP-21 elected by acclamation Michael Church (Grenada) as President, and Patrick McInerney (Australia), Kamran Lashari (Pakistan), and Ramadhan Kajembe (Kenya) as Vice Presidents, and Azra Rogović-Grubić (Bosnia and Herzegovina) as Rapporteur. President Church urged all delegations that had not submitted their credentials to do so as soon as possible.

PRESENTATIONS BY THE ASSESSMENT PANELS ON THE STATUS OF THEIR WORK: MOP-21 President Church invited reports from the assessment panels.

Environmental Effects Assessment Panel: On Saturday in the high-level segment, Environmental Effects Assessment Panel Co-Chair Janet Bornman (Denmark) presented on environmental effects of ozone depletion and its interactions with climate change from the Panel's Progress Report 2009, including status of ozone and ultraviolet radiation reaching the Earth, and effects on human health, terrestrial ecosystems, aquatic ecosystems, biogeochemical cycles, air quality and materials.

Technology and Economic Assessment Panel (TEAP): The TEAP Co-Chairs Lambert Kuijpers (Netherlands) and Stephen Anderson (US) updated delegates on the content of the TEAP report scheduled for completion at the end of 2010, and outlined the content of each technical options committee (TOC) report.

PRESENTATION BY THE MULTILATERAL FUND: On Saturday, Executive Committee (ExComm) Chair Husamuddin Ahmadzai (Sweden) discussed the key achievements of the ExComm and its implementation agencies. He noted that the ExComm had been considering the technical and policy matters of addressing the climate and energy aspects of reducing ODS, as called for in Decision XIX/6. He described a potential special facility for additional income that might cover costs to maximize climate and environmental benefits.

STATEMENTS BY HEADS OF DELEGATIONS: On Saturday and Sunday, delegates heard statements from senior officials and heads of delegations.

Iran stressed the need for pharmaceutical grade chlorofluorocarbons (CFCs) for metered dose inhalers (MDIs), and that viable alternatives for methyl bromide quarantine and preshipment (QPS) must be identified. Cuba stressed that the Ozone and UNFCCC Secretariats should work together to enable developing countries to get the technical and financial assistance required. Iraq highlighted the need for further consideration of alternatives for high ambient temperature countries.

Fiji, also on behalf of the Cook Islands and Tonga, stressed the need for continued institutional strengthening. Explaining that there are several challenges in phasing out HCFCs, India urged the ExComm to resolve pending issues. Malaysia said the debate on HFC phase-out was premature as alternatives did not exist in many applications. The Dominican Republic explained that while it did not support the amendment proposal to include HFCs in the Montreal Protocol, a broad review of HFCs was necessary. Canada explained that HFC use is a consequence of HCFC phase-out, and urged parties to rise to the challenge of phasing down HFCs.

China highlighted the importance of the phase-out of HCFCs, called on the developed countries to provide adequate funds, and hoped this meeting would provide a signal to the Copenhagen climate conference in December 2009 to prioritize HFCs. The European Union (EU) urged parties to continue to make efforts not only to protect the ozone layer, but also the climate, and favored expeditious efforts to control HFCs and achieve synergies with the UNFCCC.

As the 196th and final party to the ozone treaties, Timor Leste committed to working together with all the parties in achieving a more sustainable world. Burkina Faso expressed his country's dedication to phase out ODS and fight global warming. Pakistan highlighted the importance of scientific research in finding alternatives, and the need for financial resources and technical assistance.

The US emphasized that the Multilateral Fund (MLF) had been at the core of the Protocol's success and said emerging challenges included how to use the MLF for seed-money to obtain climate investments from other sources. Saudi Arabia expressed concerns about restrictions imposed on HFCs, which not long ago, had been considered as alternatives for ODS. Kuwait said deliberations appeared to have become disorientated by focusing on activities outside the scope of the Montreal Protocol, while HCFC phase-out is yet to be completed.

Croatia highlighted that phasing out ODS has been progressing in line with the Montreal Protocol targets and noted the need to improve systems for the recovery, recycling and destruction of ODS in an economically viable way.

Angola provided an overview of national programmes aimed at eliminating ODS. Uganda highlighted the challenge of controlling the use of second-hand products and equipment whose functioning relies on ODS, and emphasized the need for technology transfer.

Bangladesh said his country is still facing the escalating problem of requiring CFCs for MDIs. Madagascar called on developed countries for financial support.

Serbia supported the proposed amendments to control HFCs under the Montreal Protocol proposed by the Federated States of Micronesia (FSM) and Mauritius, and by North American countries. FSM stressed the importance and urgency for controlling HFCs and the need to amend the Montreal Protocol to deal with the issue. The Philippines outlined national efforts and achievements in phasing out ODS, and supported a phase-down of HFCs.

Reporting on his country's progress in phasing out ODS, Malawi pointed to a lack of alternatives for HCFCs and problems of access to destruction technologies. Mozambique highlighted implementation difficulties in phasing out ODS, and called for increased financial and technical support. Yemen

regretted slow progress on HCFC phase-out and called on the ExComm and the MLF to pay special attention to countries in high ambient air temperature regions. Zimbabwe said facilities for the environmentally sound destruction of ODS banks should be made available to all regions. Andorra outlined national activities to protect the ozone layer and supported the regulation of HFCs under the Montreal Protocol.

Indonesia highlighted the need for financial and technical assistance to Article 5 countries and the importance of participation of local people in implementation. Tajikistan outlined challenges faced by his country, including economic difficulties and illegal trade of ODS.

The Marshall Islands underscored national efforts to address climate change through building resilience and the importance of phasing down HFCs. Stressing that his country is already experiencing food shortages due to climate change, the Solomon Islands stressed the need for adequate financial support for HCFC Phase-out Management Plan (HPMP) preparation. Kiribati highlighted the establishment of the Regional Network of Ozone Officers for Pacific Island Countries and his country's efforts to enforce an ODS licensing system.

Japan underscored the need to address ODS banks and expressed willingness to provide support to those Article 5 countries eager to address banks. Kenya and Tonga stressed that Montreal Protocol parties had an obligation to continue working hard and not to become complacent. Sudan highlighted that the Montreal Protocol's paperless meeting concept contributes to a more sustainable meeting. Somalia discussed efforts to spear-head ODS activities in a challenging post-conflict peace building environment. Nicaragua described efforts to ban methyl bromide for farming uses. Noting the importance of expanding pilot destruction projects and addressing banks, Brazil said it was premature to consider an amendment to the Protocol on HFCs. Mongolia noted that the Montreal Protocol had demonstrated that the industrial sector could be a powerful partner. South Africa recalled the imminent phase-out of CFCs in Article 5 countries and highlighted efforts to address HCFCs. Grenada underscored its uncompromising commitment to protecting the ozone layer and the climate system. Mexico described its success in phasing out CFCs, noting phase-out had been achieved without having to request essential use nominations. Ghana highlighted its experience in intercepting mislabeled refrigerants, and urged parties to develop regional destruction centers. The International Institute of Refrigeration stressed that refrigeration is essential to life and that technological developments were necessary to reduce costs. The Basel Convention Secretariat highlighted its relationship with the Montreal Protocol, and invited all parties to participate in the Extraordinary Meetings of the Conferences of the Parties to the Basel, Rotterdam and Stockholm Conventions, scheduled to convene in Bali, Indonesia, in February 2010.

MOP-21 OUTCOMES AND DECISIONS

MEMBERSHIP OF MONTREAL PROTOCOL BODIES

FOR 2010: The issue was raised in the preparatory segment on Wednesday, and Saturday during the high-level segment. On Wednesday, Co-Chair Akhtar introduced the agenda item on new members for the Montreal Protocol's Implementation Committee (UNEP/OzL.Pro.21.3, XXI/[BB]), membership of the Executive Committee of the Multilateral Fund (UNEP/OzL.Pro.21.3, XXI/[CC]) and new Co-Chairs for the Open-Ended Working Group (OEWG) (UNEP/OzL.Pro.21.3, XXI/[DD]). He reminded

participants of the need to nominate members to the Bureau, the Implementation Committee and the ExComm, noting that the President of the Bureau would be from the Group of Latin American and Caribbean Countries (GRULAC).

The high-level segment confirmed the positions of Armenia, Germany, Nicaragua, Niger and Sri Lanka as members of the Implementation Committee for one additional year, and agreed to select Egypt, Jordan, St. Lucia, the Russian Federation and US as members of the Committee for a two-year period beginning 1 January 2010. It also noted the selection of Javier Camargo (Colombia) to serve as Chair and Philippe Chemouny (Canada) to serve as Vice-Chair of the ExComm of the MLF for one year beginning 1 January 2010. Parties also endorsed the selection of Martin Sirois (Canada) and Fresnel Araujo (Venezuela) as Co-Chairs of the OEWG in 2010.

FINANCIAL REPORTS AND BUDGETS: On Wednesday, in the plenary of the preparatory segment, Co-Chair Akhtar established a budget committee to be co-chaired by Ives Gomez (Mexico) and Alessandro Giuliano Peru (Italy) to deliberate on and recommend, among other things, a revised budget for 2009, a budget for 2010 and an indicative budget for 2011.

On Friday, the budget committee had a first round discussion on a draft decision. In this draft, the proposed revised 2009 budget was in the amount of US\$5,329,104, and the proposed 2010 budget in the amount of US\$4,948,398 and the proposed 2011 budget was US\$4,935,639. The parties agreed on the revised budget for 2009, but did not reach consensus on the exact level of the budgets for 2010 and 2011.

The budget committee met again on Saturday. Parties agreed to add an amount of up to US\$400,000 to the budget for 2010 to accommodate the activities under discussion by MOP-21. A footnote was added to the budget to the effect that the additional funds are not available to be re-programmed to other activities. With this, the group agreed to the budget decision. The draft decision was forwarded to the high-level segment and was adopted on Sunday.

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.14/Rev.1) the MOP:

- approves the revised 2009 budget in the amount of US\$5,329,104, and the 2010 budget in the amount of US\$5,400,398 and takes note of the proposed budget of US\$4,935,639 for 2011;
- authorizes the Secretariat to draw down US\$1,123,465 in 2010 and notes the proposed drawdown of US \$658,706 in 2011;
- approves total contributions to be paid by the parties of \$4,276,933 for 2010 and notes the contributions of \$4,276,933 for 2011; and
- authorizes the Secretariat to maintain the operating cash reserve at 15% of the 2010 budget to be used to meet the final expenditures under the Trust Fund.

ENVIRONMENTALLY SOUND MANAGEMENT OF ODS BANKS: The issue was raised in the preparatory segment on Wednesday. A contact group met from Wednesday to Sunday, and a draft decision was then forwarded to the preparatory segment on Sunday and adopted by the high-level segment.

In plenary, on Wednesday, TEAP Co-Chairs Paul Ashford, Lambert Kuijpers and Paulo Vodianitskaia presented the final report of the TEAP task force on the management and destruction of ODS banks (UNEP/OzL. Pro.21/7). The main

conclusions of the report include, *inter alia*: the collection, recovery and destruction of refrigerants of all types represents the most immediate and cost-effective method of mitigating climate impacts from the release of ODS banks; decisions to include ODS substitutes within the scope of end-of-life activities could increase the demand for destruction capacity to as much as 400,000-450,000 tonnes annually by 2030; and the potential funding of ODS bank management activities continues to receive significant attention. Brazil clarified that the information on Brazil contained in the TEAP report was not official data. The US introduced a draft decision on destruction (UNEP/OzL. Pro.21/CRP.2). Japan and Canada said the US proposal presented a good basis for further discussion. The EU encouraged further analysis on, *inter alia*, ODS destruction and cost calculations. Brazil emphasized the importance of destruction and of the support by the MLF for Article 5 countries. China, Indonesia and Liberia suggested that the issue of ODS banks be addressed as a matter of priority. On Thursday, Colombia proposed a draft decision on the issue (UNEP/OzL. Pro.21/CRP.6).

In the contact group, co-chaired by Annie Gabriel (Australia) and Mazen Hussein (Lebanon), discussions on Wednesday, Thursday and Friday focused on the US proposal. Delegates discussed operative paragraphs concerning: a seminar on how to mobilize funds; a request to the ExComm regarding the conduct of further projects on the export and destruction of ODS in low volume consuming countries; and a request to the TEAP to review destruction technologies and report to the Open-ended Working Group (OEWG) on their commercial availability. Some delegates suggested that TEAP also focus on other issues, including the impact of these technologies on the environment, health and energy efficiency. Others warned against duplicating work already undertaken in the 2002 TEAP report. Delegates agreed to request the TEAP to report to the OEWG on both the commercial and technical availability of technologies. The group also discussed a paragraph proposing to include the issue of a special facility to promote climate benefits on the agenda of OEWG-30, saying it would help address policy issues. Several delegates underscored the need to continue deliberations in the ExComm to develop options that could then be discussed in the OEWG. Delegates agreed to discuss potential parallel track efforts at the bilateral level.

The group then turned to the proposal submitted by Colombia. Delegates discussed a request to the MLF to establish criteria to define the cost effectiveness of ODS destruction that takes into account impacts on ozone and climate. Some participants pointed at the lack of data and experience on this issue. Discussions also focused on whether to request the ExComm to generate more information through further pilot projects. Several developed countries said this was not necessary as decision XX/7 on environmentally sound destruction of ODS banks did not limit the number of pilot projects the ExComm may consider. One party expressed concern that the HCFC phase-out already implied costs, and emphasized that compliance activities have priority. Several developing countries said the ExComm should not be requested to consider destruction projects with special emphasis on low volume consuming countries, as proposed in the US draft decision, but in all Article 5 countries. Discussions then moved to whether the ExComm should be requested to elaborate a proposal on a general strategy of the Montreal Protocol for destruction and on the amounts of MLF resources

that should be provided. Several developed countries said the goal of such a strategy was unclear and preferred a learning-by-doing approach.

After bilateral discussions throughout Saturday, the Co-Chairs compiled a proposal that combined key ideas from the US and Colombian CRPs, and presented it to the group on Sunday morning. Delegates first discussed concerns by some developing countries that a request to the ExComm to consider further destruction projects would be limited to low volume consuming countries. They then debated the extent to which the ExComm was to report to OEWG-30 on possible options for a facility to mobilize resources to achieve maximum climate benefits. One developed country preferred deleting the request to report on possible options for the facility. Another developed country emphasized that there were policy issues involved that needed to be brought to parties' attention.

Delegates also debated whether the draft decision should request the TEAP and the parties to use information generated from pilot projects to inform the consideration of funding levels for destruction that could be provided in the next replenishment. Some developed countries preferred to delete this request saying that the terms of reference for replenishment were to be discussed in the relevant contact group. Some developing countries pointed out that this was the most important idea taken from the Colombian CRP and stressed that the MLF had to support some part of national destruction strategies because destruction was a responsibility of the Montreal Protocol. In the end, compromise language was found on all these issues and a draft decision was forwarded to the preparatory segment plenary.

In the preparatory segment plenary on Sunday afternoon, contact group Co-Chair Gabriel introduced the group's draft decision (UNEP/OzL.Pro.21/CRP.17). She highlighted that representation of Article 5 and non-Article 5 parties in the contact group had been good and thanked participants for their flexibility. The draft decision was forwarded to the high-level plenary and adopted.

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.17), the MOP, *inter alia*:

- requests the Ozone Secretariat to host a seminar on the margins of OEWG-30 on how to identify and mobilize funds for destruction, including funds additional to those being provided under the MLF, and further requests the Ozone Secretariat to invite the MLF and the Global Environment Facility (GEF) to consider co-coordinating this effort;
- requests the ExComm to continue its consideration of further pilot projects in Article 5 parties, and in that context, to consider the costs of a one-time window within its current destruction activities to address the export and environmentally-sound disposal of ODS banks in low volume consuming countries;
- requests the TEAP to review those destruction technologies identified in its 2002 report as having a high potential, and any other technologies, and to report back to OEWG-30 on their commercial and technical availability;
- agrees that the ExComm should develop and implement, as expeditiously as possible, a methodology to verify the climate benefits and costs associated with MLF projects to destroy ODS banks;

- requests the ExComm to continue its deliberations on a special facility and to report on these deliberations, including possible options for such a facility, as appropriate, to OEWG-30 as an agenda item;
- calls upon parties, and institutions not traditionally contributing to the financial mechanism, to consider making additional support available to the MLF for ODS destruction;
- requests the ExComm to report annually on the results of destruction projects to the MOP, and requests the TEAP, based on this and other available information, to suggest to OEWG-31 components designed to help parties of diverse size and with diverse wastes to develop national and/or regional strategic approaches to address ODS destruction. In addition, this information should be available to the TEAP and the parties to inform the consideration of the financial implications for the MLF and other funding sources of addressing the destruction of ODS banks.

HIGH-GLOBAL-WARMING-POTENTIAL ALTERNATIVES TO OZONE-DEPLETING SUBSTANCES (DECISION XX/8): Proposed Amendment to the Montreal Protocol and Consideration of Work forwarded from

OEWG-29: The issue was raised in the preparatory segment on Wednesday. A contact group met in open sessions each day, and in a closed session on Sunday afternoon. The draft decision was forwarded from the preparatory segment to the high-level segment on Sunday, where it was adopted.

In the preparatory segment on Wednesday, Co-Chair Sirois introduced the item (UNEP/OzL.Pro.21/3, II.A, and Add.1) and invited the proponents of the two proposed amendments to introduce them. In a lengthy discussion in plenary, many parties noted questions about the North American amendment proposal, and voiced opposing views over the need to phase-down HFCs and about whether HFCs are within the ambit of the Montreal Protocol. Sirois convened a contact group that would consider the amendment proposal, as well the two draft decisions on HCFCs and HFCs (UNEP/OzL.Pro.21/3, XXI/[I], and XXI/[J]).

The contact group, co-chaired by Laura Berón (Argentina) and Mikkel Sørensen (Denmark), met in open sessions on Wednesday. After an initial discussion in Wednesday's contact group on how the group would proceed, on Thursday, parties began to discuss the technical, financial, and political and legal issues of the North American amendment proposal. The discussions were from a "conceptual viewpoint," so as to avoid delving into textual details. Delegates also discussed the bracketed text in the draft decision on HCFCs (UNEP/OzL.Pro.21/3, XXI/[I]).

On Friday, the contact group continued discussions on the draft decision on HCFCs, where delegates discussed, most notably, its sixth operative paragraph on projects and programmes regarding the phase-out of HCFCs. Delegates grappled with: making a feasible request to the ExComm considering that it would be meeting the week following MOP-21; constructing the text so that it takes into consideration paragraph 11 of Decision XIX/6 on the priority for cost-effective projects and programmes; and simplifying the text.

A few developing countries then suggested new subparagraphs on the need for the ExComm to: provide adequate funding for preparing and implementing demonstration projects on HCFC alternatives, particularly for air conditioning applications in high ambient temperature areas, considering

different climate and environmental benefits; and consider and approve demonstration and pilot projects in air conditioning and refrigeration sectors that apply environmentally sound alternatives to HCFCs. A large developing country requested, and delegates agreed, to include a paragraph requesting parties to review and amend the policies and standards that prevent the use and application of products with low GWP alternatives to ODS. One country's proposed text on examining HFC consumption and the availability of low GWP alternatives as a central component of their HPMP was moved to the draft decision on HFCs.

Parties then turned their attention to other matters. During the introduction of the text, the US, noting that it may not be possible to pass the proposed amendment to the Montreal Protocol on an HFC phase-down, withdrew the North American amendment proposal and, instead, proposed language to be inserted into the draft decision on high-GWP alternatives. This decision was debated and re-written over the next two days.

The final wording of the draft decision on "HCFCs and environmentally sound alternatives," (UNEP/OzL.Pro.21/CRP.20) was agreed in a closed contact group on Sunday. Maged George, Minister of Environment (Egypt) proposed compromise text that deleted any mention of HFCs from the text and replaced it with "environmentally sound alternatives."

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.20), the MOP:

- notes that the transition from, and phase-out of, ODS has implications for climate system protection;
- recalls that Decision XIX/6 requests parties to accelerate HCFC phase-out of production and consumption;
- requests the TEAP, in its May 2010 Progress Report and subsequently in its 2010 full assessment, to provide the latest technical and economic assessment of available and emerging alternatives and substitutes to HCFCs;
- requests the TEAP in its 2010 progress report to: list all sub-sectors using HCFCs, with examples of technologies where low-GWP alternatives are used; identify and characterize the implemented measures for ensuring safe application of low-GWP alternative technologies and products as well as barriers to their phase-in, in the different sub-sectors; and provide a categorization and reorganization of the information previously provided in accordance with Decision XX/8 as appropriate, to inform the parties of the uses for which low- or no-GWP and/or other suitable technologies are or will soon be commercialized;
- requests the Ozone Secretariat to provide the UNFCCC Secretariat with the report of the workshop on high GWP alternatives for ODS;
- encourages parties to promote policies and measures aimed at avoiding the selection of high-GWP alternatives to HCFCs and other ODS in those applications where other market-available, proven and sustainable alternatives exist that minimize impacts on the environment, including on climate, as well as meeting other health, safety and economic considerations in accordance with decision XIX/6;
- encourages parties to promote the further development and availability of low GWP alternatives to HCFCs and other ODS;
- requests the ExComm to expedite the finalization of its guidelines on HCFCs in accordance with Decision XIX/6; and

- requests the ExComm, when developing and applying funding criteria for projects and programmes regarding in particular the HCFC phase-out: take into consideration paragraph 11 of Decision XIX/6; consider providing additional funding and/or incentives for additional climate benefits, where appropriate; and take into account, when considering the cost-effectiveness of projects and programmes, the need for climate benefits.

ESSENTIAL-USE EXEMPTIONS: The issue was raised in the preparatory segment on Wednesday, and a contact group was established, which met throughout the week. On Sunday, the draft decisions were forwarded from the preparatory segment to the high-level segment where they were adopted.

Proposal on nominations for essential-use exemptions for 2010 and 2011: On Wednesday in plenary, Co-Chair Akhtar introduced the report of the TEAP and the draft decision (UNEP/OzL.Pro.21/3, XXI/[H]). The draft decision was related to the use of controlled substances, namely CFCs for MDIs, for 2010 and 2011. A contact group co-chaired by Robyn Washbourne (New Zealand) and W.L. Sumathipala (Sri Lanka) was established to consider the issue.

On Friday, the Russian Federation introduced a draft decision on essential-use exemptions for CFC-113 for aerospace applications (UNEP/OzL.Pro.21/CRP.10), which was considered by the contact group on essential-use exemptions.

On Sunday, Co-Chair Washbourne reported that the contact group had concluded its work. The draft decision on essential uses and the one proposed by the Russian Federation were forwarded by the preparatory segment to the high-level segment, where they were adopted.

Final Decisions: In the decision on essential uses (UNEP/OzL.Pro.21/CRP.19), the MOP:

- authorizes the levels of production and consumption for 2010 necessary to satisfy essential uses of CFCs for MDIs for asthma and chronic obstructive pulmonary disease;
- requests nominating parties to supply to the Medical Technical Options Committee (MTOC) information to enable assessment of essential use nominations in accordance with the criteria set out in decision IV/25 and subsequent decisions as set out in the Handbook on Essential Use Nominations;
- encourages parties with essential-use exemptions in 2010 to consider sourcing required pharmaceutical grade CFCs initially from stockpiles;
- encourages parties with stockpiles of pharmaceutical grade CFCs potentially available for export to parties with essential-use exemptions in 2010 to notify the Ozone Secretariat, and requests the Secretariat to post on its website details of the potentially available stocks;
- requests the ExComm to consider, at its next meeting, reviewing the CFC production phase-out agreements with China and India with a view to allowing production of pharmaceutical grade CFCs to meet the authorized levels; and
- requests that the parties listed in the annex to the decision shall have full flexibility in sourcing the quantity of pharmaceutical grade CFCs to the extent required for MDI manufacturing, either from imports or from domestic producers or from existing stockpiles.

In the decision on essential use exemptions for CFC-113 (UNEP/OzL.Pro.21/CRP.10), the MOP: authorizes the levels of production and consumption of CFC-113 in the Russian Federation for essential-use exemptions for CFCs in its

aerospace industry in the amount of 120 metric tonnes in 2010, and requests the Russian Federation to explore further the possibility of importing CFC-113 for its aerospace industry needs from available global stocks.

Consideration of amendments to the handbook on essential-use nominations (Decision XX/3): Co-Chair Sirois introduced the agenda item on Wednesday, and it was agreed this would be discussed in the contact group on essential uses. On Sunday, contact group Co-Chair Washbourne reported that discussion had concluded that there would be no changes to the handbook at this time.

METHYL BROMIDE: The issue was raised in the preparatory segment on Thursday and Co-Chair Sirois established a contact group on critical use exemptions (CUEs) and QPS uses for methyl bromide co-chaired by Federica Fricano (Italy) and Leslie Smith (Grenada). The group met on Friday, Saturday and Sunday, and three draft decisions were then forwarded to the preparatory segment on Sunday, and adopted by the high-level segment.

Presentation by the TEAP: On Thursday, in plenary, Mohamed Besri, Methyl Bromide TOC (MBTOC), reported on the final recommendations for critical use nominations (CUNs) for methyl bromide, saying that since 2005 the number of requests has decreased. He also said that while methyl bromide stocks for all parties have decreased, one party's stock is twice its CUE. He then presented the MBTOC 2010 workplan. Ian Porter, MBTOC, provided an overview of CUNs for soil uses, noting that in its final assessment seven of the CUNs were reassessed and 20 remain unchanged. He highlighted issues raised by the report on CUNs, including that more restrictive regulations on the use of fumigant alternatives, especially chloropicrin and dichloropropene, are affecting methyl bromide reductions for several remaining CUN uses. Michelle Marcotte, MBTOC, provided an overview of CUNs for food processing structures and commodities, and highlighted the higher cost of alternatives as reason for stalled progress in achieving zero CUNs for methyl bromide in this sector.

Nominations for critical-use exemptions: On Thursday, Canada introduced a draft decision on CUEs for methyl bromide for 2010 and 2011. Cuba, the EU and Mexico urged the few countries still requesting nominations to reduce their use of methyl bromide. The US said it had reduced its nominations for methyl bromide stressing that the remaining nominations are critical. The US suggested starting negotiations on CUEs at the bilateral level. Malaysia advocated the implementation of an integrated pest management approach. The Natural Resources Defense Council called on one party to use its existing stocks of methyl bromide for critical uses.

The contact group discussed the draft decision on CUEs for methyl bromide for 2010 and 2011. Agreement was reached on several paragraphs, but delegates differed on quantities of CUEs for the US. Agreement was later reached through bilateral consultations.

On Sunday, the plenary of the preparatory segment decided to forward the draft decision on CUEs for methyl bromide to the high-level segment, where it was adopted.

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.5/Rev.1) the MOP, *inter alia*:

- permits the agreed critical-use categories for 2010 set forth in table A of the annex, the levels of production and consumption

for 2010 set forth in table B of the annex, the agreed critical-use categories for 2011 set forth in table C of the annex, and the levels of production and consumption for 2011 set forth in table D of the annex;

- requests the TEAP to ensure that the critical use recommendations reported in its annual progress report clearly set out the reasons for recommendations;
- requests all parties that have nominated a CUE to report data on stocks;
- requests parties to submit updates of the reports requested in the decisions on critical uses, including the relevant information; and
- requests MBTOC to summarize in the table on its recommendations for each nomination information on adherence with each criterion set out in Decision IX/6(1)(a)(ii) and (b)(i) and (b)(iii) and other relevant decisions of the parties.

QPS of methyl bromide: On Thursday in plenary, Co-Chair Sirois introduced the item. Leslie Smith (Grenada), Co-Chair of the QPS workshop held on 3 November 2009, discussed, *inter alia*, information on the economic feasibility of alternatives in Article 5 countries. China proposed that the MLF provide financial support and that developed countries provide technical assistance to developing countries. The EU introduced a draft decision on QPS uses of methyl bromide.

The contact group discussed the draft decision on QPS uses submitted by the EU on Friday, Saturday and Sunday. The EU outlined the draft decision, requesting MOP-22 to consider the establishment of a freeze and cap on methyl bromide production and consumption for QPS, and to further consider the phase-out of specific uses of methyl bromide for QPS in areas where alternatives are technically and economically feasible. One developed country and several developing country parties opposed freezing and setting a cap on methyl bromide for QPS because applicable alternative technologies are not available. Several parties said they need time to consider the issue and to consult among different government agencies and stakeholders in their countries on this draft decision before taking a position. Several developing country parties said they could not accept this text. A few developed country parties supported the draft in general, but said that amendments were necessary. After consultation among parties, the contact group decided to delete the paragraph relating to establishing a freeze on methyl bromide production and consumption for QPS.

The contact group also discussed a draft decision on reporting of methyl bromide for QPS use, introduced by the co-chairs and forwarded from OEWG-29 on Saturday.

On Sunday the plenary of the preparatory segment decided to forward the two draft decisions to the high-level segment, where they were adopted.

Final Decisions: In the decision on QPS uses of methyl bromide (UNEP/OzL.Pro.21/CRP.7/Rev.1), the MOP, *inter alia*:

- reminds parties of their obligations to report annual data on the consumption of methyl bromide for QPS uses;
- requests the TEAP and its MBTOC to provide a report to be considered by the OEWG-30 covering four categories of information related to QPS uses of methyl bromide. The four categories include: technical and economic feasibility, and availability of alternatives; availability and market penetration rate of QPS alternatives; an update of Table 9.1 of the 2009 Task Force report; and a description of draft methodology;

- encourages parties to apply best-practice measures to reduce methyl bromide QPS uses and emissions;
- encourages parties to consider adopting incentives to promote the transition to alternatives such as deposit/rebate schemes or other financial measures; and
- encourages parties or regions to use the October 2009 TEAP QPS task force report to develop documents that summarize information on technical options, adopted technologies, the reductions achieved, the investments needed, the operating costs, and the funding strategies.

In the decision on reporting of QPS uses on methyl bromide (UNEP/OzL.Pro.21/L.2), the MOP urges parties that have not reported data on QPS applications for previous years to do so expeditiously and to urge all parties to report such data annually, as required under paragraph 3 of Article 7 of the Montreal Protocol.

REPORT OF THE TEAP: Alternatives to HCFCs in the refrigeration and air-conditioning sectors: In the preparatory segment on Thursday, Co-Chair Akhtar introduced this item relating to parties operating under paragraph 1 of Article 5 with special conditions (decision XIX/8). Kuwait, supported by Oman, Jordan and Iraq, raised concerns about the availability of HCFC alternatives in countries with high ambient air temperature and about the report's treatment of this issue. The EU noted that while alternatives exist, these are mostly HFCs. He outlined bilateral work on this issue and said further work on alternatives was necessary. The Gambia highlighted the necessity for accessibility and affordability. Co-Chair Akhtar suggested, and delegates agreed, that MOP-21 would take note of the report, request the TEAP to consider the above discussion, and revisit the issue at MOP-22.

Projected regional imbalances in the availability of halons: In the preparatory segment on Thursday, Co-Chair Akhtar introduced the item and a draft decision submitted by Australia, Canada and the US (UNEP/OzL.Pro.21/CRP.4). The EU noted that it supports the proposal in principle, but said some details required clarification. Delegates agreed to consult bilaterally. On Sunday, the draft decision was forwarded from the preparatory segment to the high-level segment, where it was adopted.

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.4/Rev.1), the MOP:

- expresses its continued support for the implementation of mandatory dates by when halon alternatives will be used in previously agreed upon applications of newly designed aircraft;
- requests TEAP and its Halons TOC (HTOC) to continue to engage the International Civil Aviation Organization on this issue and to report progress on this issue to the parties at MOP-22;
- encourages parties that have implemented import and/or export restrictions of recovered, recycled or reclaimed halons to consider reassessing their situation with a view towards removing barriers on the import and export of recovered, recycled or reclaimed halons to allow, wherever possible, their free movement between parties to enable them to meet current and future needs;
- encourages parties to refrain from destroying uncontaminated recovered, recycled, or reclaimed halons before they have considered their domestic as well as the global long-term future needs for halons, and to consider retaining them for anticipated future needs in a manner that employs best practices for storage and maintenance, in order to minimize emissions; and
- encourages parties to report their assessments of current and long-term future needs for halons to the Ozone Secretariat for use by the TEAP and its HTOC in their future assessments of management of halon banks, and, to inform their users of halons of the need to prepare for reduced access to halons in the future, and to take all actions necessary to reduce their reliance on halons.

Laboratory and analytical-use exemptions: In the preparatory segment on Thursday, the EU noted it was in the process of updating its draft decision on this matter, and delegates agreed to consult informally and return to this item later in the week. On Friday, the draft decision on global laboratory and analytical use exemption submitted by Australia, the EU and the US (UNEP/OzL.Pro.21/CRP.9/Rev.1) was forwarded to the high-level segment where it was adopted. This document includes an explanatory note on: the Chemicals TOC report, the extension of the global and analytical use exemption to Article 5 countries, uses already banned, regional works, and other issues.

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.9/Rev.1), the MOP:

- extends the applicability of the global laboratory and analytical use exemption to Article 5 countries from 1 January 2010 until 31 December 2010 for all ODS except those in Annex B Group III, Annex C Group I and Annex E;
- extends the global laboratory and analytical use exemption beyond 31 December 2010 until 31 December 2014 for Article 5 parties for all ODS except those in Annex B Group III, Annex C Group I and Annex E, and for non-Article 5 parties for all ODS except those in Annex C Group I;
- requests all parties to urge their national standards-setting organizations to identify and review those standards that mandate the use of ODS in laboratory and analytical procedures with a view to adopting, where possible, ODS-free laboratory and analytical products and processes;
- allows Article 5 parties until 31 December 2010 to deviate from the existing laboratory and analytical use bans in individual cases, where a party considers that this is justified, and to ask parties to revisit this issue at MOP-22; and,
- requests parties to continue investigating domestically the possibility of replacing ODS in those laboratory and analytical uses listed in the TEAP report, and to make this information available to the Ozone Secretariat by 30 April 2010.

Process agents: On Thursday, Co-Chair Akhtar introduced a draft decision submitted by the EU, Australia and Canada (UNEP/OzL.Pro.21/3/Add.2, Annex 3), and the preparatory segment agreed to forward the decision to the high-level segment, where it was adopted.

Final Decision: In the decision on process agents (UNEP/OzL.Pro.21/L.2), the MOP, *inter alia*:

- requests all parties with process agent uses of controlled substances to submit the information required by decision X/14 by 30 September each year to the Ozone Secretariat;
- clarifies that the annual reporting obligation shall not apply once a party informs the Ozone Secretariat they do not use ODS as process agents under Decision X/14 until they start

doing so and this one-time procedure pertains to all parties whether or not they are listed in Table B of Decision X/14.

- requests the TEAP and the ExComm to prepare a joint report for future meetings, reporting on progress with phasing out process agent issues, as sought by Decision XVII/6 (paragraph 6); and
- suggested revisiting this issue at the OEWG-30.

Further work on CTC emissions: In the preparatory segment on Thursday, the EU introduced a revised proposal on CTCs. Argentina noted its observations had not been fully reflected and, with China, agreed to consult directly with the EU to revise the proposal. On Friday, the EU said that agreement had been reached. Co-Chair Sirois said that the draft decision would be made available to delegates for review before forwarding it to the high-level segment. It was adopted in the high-level segment on Sunday.

Final Decision: In the decision (UNEP/OzL.Pro.21/CRP.12), the MOP, *inter alia*:

- encourages parties having any CTC and other chloromethane production and/or consumption in pharmaceutical manufacturing processes to review their national data on production, consumption and, where possible, estimated emissions, to provide any new data to the TEAP, and to provide support for atmospheric research in the measurement of emissions of CTC with a particular focus on regions in which there is a need for improved data;
- requests the TEAP, in its 2011 assessment report, to investigate chemical alternatives to ODS in exempted feedstock uses, and investigate alternatives, including not-in-kind alternatives, to products made with such process agents and feedstocks and provide assessment of the technical and economic feasibility of reducing or eliminating such use and emissions; and
- requests TEAP and the Scientific Assessment Panel to review the ozone-depleting potential and atmospheric lifetime of CTC with a view to possibly reconciling the large discrepancy between emissions reported and those inferred from atmospheric measurements, and to coordinate their relevant findings.

Issues arising out of TEAP reports: On Thursday, Co-Chair Akhtar introduced the item and announced the proposed appointment of Roberto Peixoto (Brazil) to the Refrigeration, Air Conditioning and Heat Pumps TOC (RTOC). Delegates endorsed the proposal, and requested the Secretariat prepare a draft decision reflecting this.

Final Decision: In the decision (UNEP/OzL.Pro.21/L.2), the MOP endorsed the selection of Roberto Peixoto (Brazil) as the new Co-Chair of the RTOC.

FINANCIAL MECHANISM OF THE MONTREAL PROTOCOL: Discussion of this matter was initiated in plenary on Wednesday and continued in a contact group, co-chaired by David Omotosho (Nigeria) and Gudi Alkemade (Netherlands). The contact group addressed both the terms of reference (TOR) of the evaluation of the MLF and a GRULAC proposal on institutional strengthening. The group completed its work on Saturday, and on Sunday two draft decisions were forwarded from the preparatory segment to the high-level segment and adopted.

TOR of evaluation of the financial mechanism of the Montreal Protocol: Delegates' discussion centered around a draft decision (UNEP/OzL.Pro.21/3, XXI/[E]) forwarded from OEWG-29. It was agreed that reference to holding a one-day workshop on the terms of the reference of the evaluation would be removed.

Final Decision: In the decision on the TOR of the evaluation of the Multilateral Fund (UNEP/OzL.Pro.CRP.15), the MOP agrees to: start discussing the TOR for an evaluation of the financial mechanism of the Montreal Protocol during OEWG-30, and to finalize them during MOP-23.

Proposal on institutional strengthening activities under the MLF: In the plenary discussion on this matter, GRULAC, supported by Burkina Faso, Pakistan, the African Group, Kenya, Saudi Arabia, India, Kuwait, Malaysia, Mauritius, Lebanon and others, emphasized institutional strengthening beyond 2010 as being crucial for Article 5 parties' ability to fully implement present and future agreements under the Montreal Protocol. The US outlined the importance of institutional strengthening in contributing to the successful implementation of the Montreal Protocol and for HCFC phase out, and said that a "new concept" for institutional strengthening would be considered at the ExComm meeting scheduled to convene after MOP-21. Argentina stressed that the issue of institutional strengthening was political in nature and, therefore, warranted discussion by the MOP. The EU, with Switzerland, highlighted its continued commitment to support institutional strengthening, with Switzerland stressing the need to communicate this to the ExComm.

Discussions in the contact group centered around GRULAC's proposal (UNEP/OzL.Pro.21/3, XXI/[F]). Delegates first agreed to consider elements of a potential political message to the ExComm. One developed country proposed language urging the ExComm to finalize its consideration of funding for institutional strengthening as expeditiously as possible. A developing country proposed reference to extending funding for institutional strengthening beyond 2010, and another country proposed a reference to increasing funding.

On Friday, GRULAC and the African Group introduced new text, and delegates agreed to discuss the issue on the basis of this text. The language proposed that the MOP "extend and increase" the level of financial support for institutional strengthening and recommended that the ExComm consider institutional strengthening requirements as a "stand alone project." The proposal attracted a robust discussion with several developed countries suggesting that, as opposed to moving the process forward, the proposal backtracked to the discussion at OEWG-29. Many developed countries stressed the need for a political statement to the ExComm and were reluctant to dictate or micro-manage activities of the body. Developing countries highlighted that since agreement was not achieved at the ExComm's last meeting, the MOP needs to instruct the ExComm on the issue. Regarding the MOP supporting the extension of institutional strengthening beyond 2010, developing countries advocated reference to "at current levels." In response, one developed country party suggested qualifying this with "for one year," or removing reference to funding levels.

After extensive discussion, delegates reached agreement on the draft decision and it was agreed by plenary and forwarded to the high-level segment, where it was adopted on Sunday.

Final Decision: In the final decision on institutional strengthening (UNEP/OzL.Pro.CRP.16), the MOP:

- urges the ExComm to extend financial support for institutional strengthening funding for Article 5 Parties beyond 2010, and to finalize its consideration of funding of institutional strengthening projects as expeditiously as possible, taking into account current and emerging challenges; and
- recommends that the ExComm does not require that institutional strengthening funding be incorporated within funding for HCFC phase-out management plans only, but allows flexibility for an Article 5 party to do so if it so chooses.

COMPLIANCE AND DATA REPORTING ISSUES:

Compliance and data reporting issues were discussed in plenary on Thursday and Friday.

On Thursday in the preparatory segment, the EU introduced a draft decision on stockpiling relative to compliance. Canada, Australia, and China supported the draft decision, with China asking for clarification of some issues. On Friday, the EU said little progress had been made but that they would continue their bilateral consultations on how to move the issue forward. There was no outcome on this issue.

Robyn Washbourne (New Zealand), Chair of the Implementation Committee, presented the Committee's draft decisions (UNEP/OzL.Pro.21/CRP.1), which the plenary forwarded to the high-level segment of MOP-21.

Decisions related to compliance and data reporting issues were adopted on Sunday.

Final Decisions: The MOP adopted eleven decisions related to compliance and data reporting (UNEP/OzL.Pro.21/L.2), including on: the establishment and reporting of licensing systems; and encouraging parties to continue to report consumption and production data. The MOP also:

- urges Bangladesh and Bosnia and Herzegovina to work with the relevant implementing agencies to implement their plans of action to phase out consumption of CFCs;
- notes the FSM's return to compliance;
- notes Mexico's non-compliance in 2008 with the provisions of the Protocol governing consumption and production of CTC;
- requests Saudi Arabia to submit a plan of action with time-specific benchmarks to ensure the party's return to compliance for CFCs;
- notes the Solomon Islands' return to compliance;
- notes Somalia's introduction of a system for licensing the imports and exports of ODS;
- cautions Turkmenistan that in the event that it fails to return to compliance in a timely manner, the MOP will consider measures consistent with item C of the indicative list of measures; and
- requests Vanuatu to submit to the Secretariat a plan of action with time-specific benchmarks to ensure the party's return to compliance for CFC production and consumption.

STATUS OF RATIFICATIONS: On Saturday, President Church noted that on 16 September 2009, the ozone treaties became the first environmental treaties with universal ratification, and he urged all the parties that have not ratified the amendments to the Montreal Protocol to do so as soon as possible.

Final Decision: In the decision on ratification of the Montreal Protocol and Vienna Convention (UNEP/OzL.Pro.21/CRP.18), the MOP:

- notes with satisfaction that 196 parties have ratified the Vienna Convention and the Montreal Protocol, representing universal ratification, and also a higher number of parties than any other treaties in history;
- notes that, as of 31 October 2009, 193 parties had ratified the London Amendment to the Montreal Protocol, 190 parties had ratified the Copenhagen Amendment to the Montreal Protocol, 178 parties had ratified the Montreal Amendment to the Montreal Protocol and 160 parties had ratified the Beijing Amendment to the Montreal Protocol; and
- urges all states that have not yet done so to ratify, approve or accede to the amendments to the Montreal Protocol, taking into account that universal participation is necessary to ensure the protection of the ozone layer.

OTHER MATTERS: On Wednesday, Indonesia introduced a draft decision on difficulties faced by Timor-Leste in compliance (UNEP/OzL.Pro.21/CRP.3). After a brief discussion, parties agreed to consult bilaterally on the precise language of the decision. On Sunday, a revised version of the decision was forwarded to the high-level segment for consideration, where it was adopted.

Final Decision: In the decision on the difficulties faced by Timor Leste (UNEP/OzL.Pro.21/CRP.3/Rev.1), the MOP:

- urges all parties to assist Timor-Leste, as a new party, in controlling the export of ODS and ODS based technologies into Timor Leste through the control of trade, and to encourage Timor-Leste to participate in an informal prior informed consent process;
- requests the ExComm, when considering project proposals for Timor-Leste, to phase out ODS to take into account the special situation of this new party, and the implementing agencies to provide appropriate assistance to Timor-Leste in institutional strengthening, capacity building, data collection, development of its country programme and national phase-out plans; and
- requests the Implementation Committee to consider difficulties faced by Timor Leste when addressing any possible non-compliance situations faced by Timor Leste after the date on which the Protocol and its amendments enter into force.

DATES AND VENUE FOR MOP-22: In Sunday's preparatory segment, Co-Chair Sirois introduced a draft decision on MOP-22, proposed to be held in Nairobi, Kenya, in October 2010. Uganda offered to host MOP-22 in Kampala and agreed to discuss this matter with the Secretariat. The decision was forwarded to the high-level segment, where it was adopted.

Final Decision: In the decision on the date and venue of MOP-22 (UNEP/OzL.Pro.22/CRP.21) the MOP agrees to convene MOP-22 in Nairobi, Kenya, in October 2010, unless other appropriate arrangements are made.

CLOSING PLENARY

The closing plenary was held on Sunday evening. At the beginning of the session, the preparatory segment reconvened and agreed to forward several outstanding decisions to the high-level segment. Co-Chair Sirois thanked delegates for their dedicated work in the preparatory segment and closed the segment.

President Church reported the meeting credentials and said the Bureau had approved the credentials of 89 of the 149 participating parties. He urged parties to submit credentials at the next meeting.

Rapporteur Azra Rogović-Grubić (Bosnia and Herzegovina) introduced the reports of the meeting (UNEP/OzL.Pro.21/L.1 and Add.1), and delegates adopted them after a number of minor amendments and statements of clarification.

Prior to the close of plenary, FSM introduced a declaration on high-GWP alternatives to ODS, which he said had the support of 37 parties, and invited other parties to sign on. Mauritius read the text of the declaration, and the EU and Australia noted that while they supported continued work on HFCs, they had had very little time to consider the declaration. Japan and New Zealand expressed their support and joined the declaration.

In their closing remarks, many parties expressed their gratitude to the Government of Egypt for hosting the meeting and to the Secretariat for their tireless work. Several delegations expressed appreciation and gratitude to Executive Secretary Marco González directly, with India describing him as “simple and humble, with a smiling face.”

In his closing remarks, President Church stated it was clear that parties wished to achieve the noble goal of cleaning and maintaining our planet for future generations. He said some of us may want to take different roads, but that the destination was the same. Church expressed hope that in 2010 there would be fewer roads, and gaveled the meeting to a close at 9:05 pm.

A BRIEF ANALYSIS OF MOP-21

The Egyptian Red Sea resort of Port Ghalib hosted the 21st Meeting of the Parties (MOP-21) to the Montreal Protocol. Like MOP-20 in Doha, Qatar, the desert environs reminded delegates of the challenge of providing cooling in high ambient air temperature environments, while also avoiding harm to the ozone layer and climate system. Throughout the meeting, delegates emphasized the achievements of the Montreal Protocol, notably the successful phasing-out of 97% of ozone depleting substances (ODS), the complete phase-out of CFCs, halons and carbon tetrachloride (CTC) by 2010, as well as universal ratification of the Protocol, with Timor Leste adding the 196th and final signature.

Despite this successful track-record, delegates faced new and emerging challenges through a heavy agenda. Two key emerging issues dominated MOP-21: the proposed phase-down of hydrofluorocarbons (HFCs) and the environmentally sound management of ODS banks, with climate as the thread between them. This analysis will examine how MOP-21 made progress on these challenges, and how this will affect the Protocol's way forward.

OZONE'S HOT TOPIC – HFCs

One issue dominated discussions at MOP-21: HFCs. The contention was whether they should be governed under the Montreal Protocol. The debate arose from proposals by the Federated States of Micronesia (FSM) and Mauritius, and the US, Canada and Mexico to amend the Protocol to allow for the control of HFCs under the ozone regime.

The history behind the proposed amendments is that in 2007, MOP-19 agreed to an accelerated phase-out of hydrochlorofluorocarbons (HCFCs). This prompted an increase

in the consumption and production of HFCs, once touted as the most environmentally-friendly substitute for HCFCs. While HFCs do not deplete the ozone layer, some of these substances have proven to have a global warming potential (GWP) thousands of times greater than that of carbon dioxide.

At MOP-21, the amendment proposals faced resolute opposition led by India and China who argued that non-ODS substances are outside the ambit of the treaty. They preferred that HFCs be addressed under the climate regime where they are already included in the basket of GHGs addressed by the Kyoto Protocol. Also, China and India may gain from HFCs included within the ambit of the climate regime because they are important producers of HCFC-22, a by-product of which is HFC-23. China and India can therefore gain credits under the climate regime's Clean Development Mechanism for destroying HFC-23.

The hesitation of other developing countries was linked to problems currently faced with the accelerated HCFC phase-out. An important issue for developing countries to agree to this in 2007 had been the reference made in Decision XIX/6 for stable and sufficient funding in order to cover incremental costs. At MOP-21, several developing countries expressed disappointment about the level of funding through the Multilateral Fund (MLF). Additional commitments, they said, would divert funds to HFC phase-out when they still require large amounts to deal with HCFCs. Other parties, including Kuwait, Oman, Jordan and Yemen, raised concerns about the availability of alternatives to HCFCs in countries with high ambient air temperatures.

Parties proposing amendments argued that the Protocol had an obligation to address these substances because of its role in promoting them as the main alternative to HCFCs, and argued there is language in the Vienna Convention about preventing negative impacts to the environment due to phase-out decisions. Furthermore, since the Montreal Protocol is concerned with production and consumption, and while the UNFCCC addresses emissions, they contend the Montreal Protocol has an important role to play given its successful track record of reducing production and consumption of dangerous substances. Given also the highly anticipated, yet very rocky path to Copenhagen, proponents expressed greater confidence in the Protocol's ability to handle the issue than the climate regime, especially given that the Montreal Protocol now can claim universal ratification.

Opponents to governing HFCs under the Montreal Protocol recently lost an important ally. At the Barcelona Climate Talks occurring concurrently with MOP-21, the EU proposed that the Protocol could be used to develop and implement a global arrangement for HFC phase-down. While the EU emphasized that these discussions should take place only after the climate conference in Copenhagen in December, this was an evolution from their position at OEWG-29 in July, where they preferred HFCs be addressed under the climate regime. Wedded strongly to a successful outcome in Copenhagen, the EU is concerned that HFCs may be important for cobbling together a climate deal. They therefore don't want countries excusing themselves from HFC discussions in Copenhagen by pointing to discussions already occurring under the Montreal Protocol. This may already be happening since there were reports that India had stated at the Barcelona Climate Talks that HFCs should not be discussed in the climate context as they were being discussed at MOP-21. In the end, substantial progress on the issue proved to be impossible.

DESTRUCTION IN THE NAME OF PROTECTION

The question of how to destroy ODS banks in an environmentally-sound manner has preoccupied the Montreal Protocol in recent years. The first problem is that the phase-out of most ODS has contributed to growing ODS banks requiring safe disposal. The second problem is that the Montreal Protocol is concerned with regulating production and consumption – not destruction – of ODS. As destruction activities are not compliance activities, they do not have priority for assistance under the MLF. Nevertheless, accumulating ODS banks are a direct result of the Protocol's phase-out programmes. For this reason, developing countries demand assistance for destruction.

To facilitate destruction while limiting additional costs, donor countries promote a learning-by-doing approach that provides MLF assistance to pilot projects on destruction rather than funding the overall process. Deliberations at MOP-21 once again demonstrated the split between Article 5 and non-Article 5 countries on this issue, with some developing countries requesting a general strategy of the Montreal Protocol to fund destruction. Recognizing that the MLF has a role to play in assisting destruction, the US and other donor countries want the MLF's role limited to the provision of "seed-funding" to attract additional resources from other institutions.

To do so would require the creation of an institutional framework, referred to as the special facility, which is currently being deliberated in the ExComm. Originally conceived as a facility to fund conversion from HCFCs to low-GWP alternatives, at MOP-21, the US promoted it in the context of destruction. Realizing that the destruction of ODS banks has climate benefits, in addition to ozone benefits, they hope to capitalize on the emission reductions via the carbon markets. A number of developing countries responded with concern that a strong emphasis on co-financing destruction will make access to funding more difficult for them.

The precise nature of the facility remains unclear and the ExComm will report on its deliberations at OEWG-30.

OZONE AND CLIMATE – A COMMON FUTURE

As delegates concluded their work at MOP-21, FSM and Mauritius presented a declaration on HFCs, supported by 37 parties. While MOP-21 failed to send a signal to Copenhagen in the form of a decision on HFCs, many felt the declaration would succeed in carrying the message forward. Others were glad that MOP-21 had seen a full exploration of positions on the matter and were satisfied that it was on the Protocol's future agenda.

On the issue of destruction several developed country delegates were pleased that momentum was maintained. Others mourned the slow progress. Looking toward the ExComm to be held immediately after MOP-21, delegates predicted extensive discussion on the special facility, and hoped for a robust debate at OEWG-30, in order to establish the potential both for funding low GWP alternatives to HCFCs and destruction. What is certain is that all MOP-21 delegates will be focused on future climate and ozone meetings to see how the hot topic of HFCs continues to evolve.

UPCOMING MEETINGS

SEVENTH WORLD FORUM OF SUSTAINABLE DEVELOPMENT: PARIS 2009: This conference will take place from 19-20 November 2009 in Paris, France. The theme

is "The new world order: after Kyoto and before Copenhagen." For more information, contact: Passages-ADAPes; tel: +33-01-43-25-2357; fax: +33-01-43-25-6365/6259; e-mail: Passages4@wanadoo.fr; internet: http://www.fmdd.fr/english_version.html

SECOND WORKSHOP ON ENERGY EFFICIENCY IN HOUSING: This workshop will take place from 23-25 November 2009 in Vienna, Austria. Results of the workshop and the related measures presented will feed into and contribute to the development of the Action Plan for Energy Efficient Housing, to be developed under the UN Economic Commission for Europe. For more information, contact: Paola Deda, Secretary to the Committee on Housing and Land Management, UNECE; tel: +41-22-917-2553, fax: +41-22-917-0107, e-mail: paola.deda@unece.org; internet: <http://www.energy-housing.net>

UNFCCC COP 15 AND KYOTO PROTOCOL COP/MOP 5: The fifteenth Conference of the Parties to the UNFCCC and fifth Meeting of the Parties to the Kyoto Protocol will take place from 7-18 December 2009 in Copenhagen, Denmark. These meetings will coincide with the 31st meetings of the UNFCCC's Subsidiary Bodies. Under the "roadmap" agreed at the UN Climate Change Conference in Bali in December 2007, COP 15 and COP/MOP 5 are expected to finalize an agreement on a framework for combating climate change post-2012 (when the Kyoto Protocol's first commitment period ends). For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: <http://unfccc.int/>

TWENTY-SEVENTH SESSION OF THE EXECUTIVE BODY FOR THE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION: This meeting will take place from 14-18 December 2009 in Geneva, Switzerland. For more information, contact the Secretariat: tel: +41-22-917-2370; fax: +41-22-917-0107; e-mail: air.env@unece.org; internet: <http://www.unece.org/env/lrtap/listofmeetings.htm>

INTERGOVERNMENTAL MEETING FOR THE HIGHLEVEL TASKFORCE ON THE GLOBAL FRAMEWORK FOR CLIMATE SERVICES: The meeting will take place from 21-22 December 2009 in Geneva, Switzerland. The meeting is being organized by the WMO pursuant to the decision of the World Climate Conference-3, held in Geneva from 31 August to 4 September 2009, for the establishment of the High Level Taskforce on the Global Framework for Climate Services. For more information, contact: WMO Secretariat; tel: +41-22-730 81-11; fax: +41-22-730 81-81; e-mail: hlt@wmo.int; internet: http://www.wmo.int/hlt-gfcs/index_en.html

EXTRAORDINARY MEETINGS OF THE CONFERENCES OF THE PARTIES TO THE BASEL, ROTTERDAM AND STOCKHOLM CONVENTIONS: The meeting will take place from 22-26 February 2010, in Bali, Indonesia. It will take place in coordination with the eleventh special session of the UNEP Governing Council and Global Ministerial Environment Forum. For more information, contact: a) Rotterdam Convention Secretariat: tel: +41-22-9178296; fax: +41-22-917-8082; e-mail: pic@pic.int; b) Stockholm Convention Secretariat: tel: +41-22-917-8729; fax: +41-22-917-8098; e-mail: ssc@pops.int; c) Basel Convention Secretariat: tel: +41-22-917-8218; fax: +41-22-797-3454; e-mail: sbc@unep.ch; internet: <http://excops.unep.ch/>

ELEVENTH SPECIAL SESSION OF THE UNEP GOVERNING COUNCIL AND GLOBAL MINISTERIAL ENVIRONMENT FORUM: The meeting will take place from 24-26 February 2010, in Bali, Indonesia. In pursuance of General Assembly resolution 53/242 (Report of the Secretary-General on environment and human settlements) of 28 July 1999, the Governing Council constitutes the annual ministerial-level global environmental forum in which participants gather to review important and emerging policy issues in the field of the environment. For more information, contact: UNEP; tel: +254-20-762-3431; fax: +254-20-762-3929; e-mail: sgc.sgb@unep.org; internet: <http://www.unep.org>

SEVENTH SESSION OF THE BASEL CONVENTION OPEN-ENDED WORKING GROUP: The session will convene from 10-14 May 2010, in Geneva, Switzerland. For more information, contact: the Basel Convention Secretariat; tel: +41-22-917-8218; fax: +41-22-797-3454; e-mail: sbc@unep.ch; internet: <http://www.basel.int/meetings/meetings.html>

UNFCCC SUBSIDIARY BODIES: This meeting is tentatively scheduled to take place from 31 May - 11 June 2010, in Bonn, Germany. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: http://unfccc.int/meetings/unfccc_calendar/items/2655.php?year=2010

THE FIRST SESSION OF THE INTER-GOVERNMENTAL NEGOTIATING COMMITTEE TO PREPARE A GLOBAL LEGALLY BINDING INSTRUMENT ON MERCURY: This session will convene from 7-11 June 2010, in Stockholm, Sweden. This meeting is expected to be the first of five Intergovernmental Negotiating Committee meetings to negotiate a legally binding instrument on mercury. For more information, contact: UNEP Chemicals; tel: +41-22-917 8183; fax: +41-22-797-3460; e-mail: mercury@chemicals.unep.ch; internet: <http://www.respoint.se/itp/event/inc1/9475> or <http://www.chem.unep.ch/mercury/>

MONTREAL PROTOCOL OEWG-30: The meeting is tentatively scheduled to take place from 21-25 June 2010, in Bangkok, Thailand. For more information, contact: the Ozone Secretariat; tel: +254-20-762-3850/1; fax: +254-20-762-4691; e-mail: ozoneinfo@unep.org; internet: <http://ozone.unep.org/Events/meetings2010.shtml>

44TH MEETING OF THE IMPLEMENTATION COMMITTEE UNDER THE NON-COMPLIANCE PROCEDURE FOR THE MONTREAL PROTOCOL: The meeting is tentatively scheduled to meet from 1-2 July 2010, in Bangkok, Thailand. For more information, contact: Ozone Secretariat; tel: +254-20-762-3850/1; fax: +254-20-762-4691; e-mail: ozoneinfo@unep.org; internet: <http://ozone.unep.org>

45TH IMPLEMENTATION COMMITTEE UNDER THE NON-COMPLIANCE PROCEDURE FOR THE MONTREAL PROTOCOL: The meeting is tentatively scheduled to meet from 21-23 October 2010, in Nairobi, Kenya. For more information, contact: Ozone Secretariat; tel: +254-20-762-3850/1; fax: +254-20-762-4691; e-mail: ozoneinfo@unep.org; internet: <http://ozone.unep.org>

BUREAU OF THE 21ST MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL: The meeting is tentatively scheduled for 23 October 2010, in Nairobi, Kenya.

For more information, contact: Ozone Secretariat; tel: +254-20-762-3850/1; fax: +254-20-762-4691; e-mail: ozoneinfo@unep.org; internet: <http://ozone.unep.org>

22ND MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL: The meeting is tentatively scheduled to take place from 25-29 October 2010, in Nairobi, Kenya. For more information, contact: Ozone Secretariat; tel: +254-20-762-3850/1; fax: +254-20-762-4691; e-mail: ozoneinfo@unep.org; internet: <http://ozone.unep.org>

GLOSSARY

CFC	Chlorofluorocarbon
CTC	Carbon tetrachloride
CUE	Critical-Use Exemption
CUN	Critical-Use Nomination
ExComm	Executive Committee
GWP	Global Warming Potential
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
HPMP	HCFC Phase-out Management Plan
MBTOC	Methyl bromide Technical Options Committee
MDI	Metered dose inhaler
MLF	Multilateral Fund
ODS	Ozone depleting substance
OEWG	Open-Ended Working Group
QPS	Quarantine and preshipment
TEAP	Technology and Economic Assessment Panel
TOC	Technical Options Committee

蒙特婁議定出締約國名單 Status of Ratification

The status of ratification is as follows: (latest ratification received on 13 October 2009)

Ratification of:	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Total number of countries	196	196	193	190	178	160

The table below shows the status of Ratification, Accession, or Approval of the agreements on the protection of the stratospheric ozone layer as provided by the Depository, the United Nations Office of Legal Affairs, New York. You could also:

- [Search the status of ratification by Treaty or by Country](#), or
- View a list of [Parties operating under paragraph 1 of Article 5](#).

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Afghanistan			17.06.2004(Ac)	17.06.2004(Ac)	17.06.2004(Ac)	17.06.2004(Ac)	17.06.2004(Ac)	17.06.2004(Ac)
Albania			08.10.1999(Ac)	08.10.1999(Ac)	25.05.2006(Ac)	25.05.2006(Ac)	25.05.2006(Ac)	25.05.2006(Ac)
Algeria			20.10.1992(Ac)	20.10.1992(Ac)	20.10.1992(Ac)	31.05.2000(R)	06.08.2007(R)	06.08.2007(R)
Andorra			26.01.2009(Ac)	26.01.2009(Ac)	26.01.2009(Ac)	26.01.2009(Ac)	26.01.2009(Ac)	26.01.2009(Ac)
Angola			17.05.2000(Ac)	17.05.2000(Ac)				
Antigua and Barbuda			03.12.1992(Ac)	03.12.1992(Ac)	23.02.1993(Ac)	19.07.1993(Ac)	10.02.2000(R)	
Argentina ¹	22.03.1985	29.06.1988	18.01.1990(R)	18.09.1990(R)	04.12.1992(R)	20.04.1995(Ac)	15.02.2001(R)	28.08.2006(R)
Armenia			01.10.1999(Ac)	01.10.1999(Ac)	26.11.2003(Ac)	26.11.2003(Ac)	18.12.2008(R)	18.12.2008(R)
Australia		08.06.1988	16.09.1987(Ac)	19.05.1989(R)	11.08.1992(At)	30.06.1994(At)	05.01.1999(At)	17.08.2005(At)
Austria	16.09.1985	29.08.1988	19.08.1987(R)	03.05.1989(R)	11.12.1992(R)	19.09.1996(Ap)	07.08.2000(R)	23.09.2004(R)
Azerbaijan			12.06.1996(Ac)	12.06.1996(Ac)	12.06.1996(Ac)	12.06.1996(Ac)	28.09.2000(Ap)	
Bahamas			01.04.1993(Ac)	04.05.1993(Ac)	04.05.1993(Ac)	04.05.1993(Ac)	16.03.2005(At)	16.03.2005(At)
Bahrain ²			27.04.1990(Ac)	27.04.1990(Ac)	23.12.1992(At)	13.03.2001(R)	13.03.2001(R)	
Bangladesh			02.08.1990(Ac)	02.08.1990(Ac)	18.03.1994(R)	27.11.2000(At)	27.07.2001(At)	
Barbados			16.10.1992(Ac)	16.10.1992(Ac)	20.07.1994(At)	20.07.1994(At)	10.12.2002(Ac)	10.12.2002(Ac)
Belarus	22.03.1985	22.01.1988	20.06.1986(At)	31.10.1988(At)	10.06.1996(R)	13.03.2007(At)	13.03.2007(At)	13.03.2007(At)
Belgium	22.03.1985	16.09.1987	17.10.1988(R)	30.12.1988(R)	05.10.1993(R)	07.08.1997(R)	11.08.2004(R)	06.04.2006(R)

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Belize			06.06.1997(Ac)	09.01.1998(Ac)	09.01.1998(Ac)	09.01.1998(Ac)	17.01.2008(Ap)	17.01.2008(Ap)
Benin			01.07.1993(Ac)	01.07.1993(Ac)	21.06.2000(R)	21.06.2000(R)	16.11.2007(At)	16.11.2007(At)
Bhutan			23.08.2004(Ac)	23.08.2004(Ac)	23.08.2004(Ac)	23.08.2004(Ac)	23.08.2004(Ac)	23.08.2004(Ac)
Bolivia			03.10.1994(Ac)	03.10.1994(Ac)	03.10.1994(Ac)	03.10.1994(Ac)	12.04.1999(Ac)	
Bosnia and Herzegovina			01.09.1993(Sc)	01.09.1993(Sc)	11.08.2003(Ac)	11.08.2003(Ac)	11.08.2003(Ac)	
Botswana			04.12.1991(Ac)	04.12.1991(Ac)	13.05.1997(Ac)	13.05.1997(Ac)		
Brazil			19.03.1990(Ac)	19.03.1990(Ac)	01.10.1992(At)	25.06.1997(R)	30.06.2004(R)	30.06.2004(R)
Brunei Darussalam			26.07.1990(Ac)	27.05.1993(Ac)	03.03.2009(Ac)	03.03.2009(Ac)	03.03.2009(Ac)	03.03.2009(Ac)
Bulgaria			20.11.1990(Ac)	20.11.1990(Ac)	28.04.1999(R)	28.04.1999(R)	24.11.1999(R)	15.04.2002(R)
Burkina Faso	12.12.1985	14.09.1988	30.03.1989(R)	20.07.1989(R)	10.06.1994(R)	12.12.1995(R)	11.11.2002(R)	11.11.2002(R)
Burundi			06.01.1997(Ac)	06.01.1997(Ac)	18.10.2001(At)	18.10.2001(At)	18.10.2001(At)	18.10.2001(At)
Cambodia			27.06.2001(Ac)	27.06.2001(Ac)	31.01.2007(Ac)	31.01.2007(Ac)	31.01.2007(Ac)	31.01.2007(Ac)
Cameroon			30.08.1989(Ac)	30.08.1989(Ac)	08.06.1992(At)	25.06.1996(At)	21.08.2009 (R)	21.08.2009 (R)
Canada	22.03.1985	16.09.1987	04.06.1986(R)	30.06.1988(R)	05.07.1990(At)	16.03.1994(R)	27.03.1998(R)	09.02.2001(At)
Cape Verde			31.07.2001(Ac)	31.07.2001(Ac)	31.07.2001(Ac)	31.07.2001(Ac)	31.07.2001(Ac)	
Central African Republic			29.03.1993(Ac)	29.03.1993(Ac)	29.05.2008(R)	29.05.2008(R)	29.05.2008(R)	29.05.2008(R)
Chad			18.05.1989(Ac)	07.06.1994(R)	30.05.2001(R)	30.05.2001(R)	30.05.2001(R)	
Chile ³	22.03.1985	14.06.1988	06.03.1990(R)	26.03.1990(R)	09.04.1992(At)	14.01.1994(R)	17.06.1998(R)	03.05.2000(R)
China ⁴			11.09.1989(Ac)	14.06.1991(Ac)	14.06.1991(Ac)	22.04.2003(Ac)		
Colombia			16.07.1990(Ac)	06.12.1993(Ac)	06.12.1993(Ac)	05.08.1997(At)	16.06.2003(Ac)	15.09.2006(Ac)
Comoros			31.10.1994(Ac)	31.10.1994(Ac)	31.10.1994(Ac)	02.12.2002(Ac)	02.12.2002(Ac)	02.12.2002(Ac)
Congo		15.09.1988	16.11.1994(Ac)	16.11.1994(Ac)	16.11.1994(R)	19.10.2001(Ac)	19.10.2001(Ac)	19.10.2001(Ac)
Cook Islands			22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)
Costa Rica			30.07.1991(Ac)	30.07.1991(Ac)	11.11.1998(R)	11.11.1998(R)	01.12.2005(R)	01.12.2008(R)
Côte d'Ivoire			05.04.1993(Ac)	05.04.1993(Ac)	18.05.1994(R)	08.10.2003(R)		
Croatia			21.09.1992(Sc)	21.09.1992(Sc)	15.10.1993(R)	11.02.1997(R)	08.09.2000(R)	25.04.2002(R)
Cuba			14.07.1992(Ac)	14.07.1992(Ac)	19.10.1998(R)	19.10.1998(Ap)	12.09.2005(At)	12.09.2005(At)
Cyprus			28.05.1992(Ac)	28.05.1992(Ac)	11.10.1994(At)	02.06.2003(At)	02.06.2003(At)	02.09.2004(R)
Czech Republic			01.01.1993(Sc)	01.01.1993(Sc)	18.12.1996(Ac)	18.12.1996(Ac)	05.11.1999(Ap)	09.05.2001(At)

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Democratic People's Republic of Korea			24.01.1995(Ac)	24.01.1995(Ac)	17.06.1999(Ac)	17.06.1999(Ac)	13.12.2001(Ac)	13.12.2001(Ac)
Democratic Republic of the Congo			30.11.1994(Ac)	30.11.1994(Ac)	30.11.1994(Ac)	30.11.1994(Ac)	23.03.2005(Ac)	23.03.2005(Ac)
Denmark ⁵	22.03.1985	16.09.1987	29.09.1988(R)	16.12.1988(R)	20.12.1991(Ac)	21.12.1993(At)	24.09.2003(At)	24.09.2003(At)
Djibouti			30.07.1999(Ac)	30.07.1999(Ac)	30.07.1999(Ac)	30.07.1999(Ac)	30.07.1999(Ac)	
Dominica			31.03.1993(Ac)	31.03.1993(Ac)	31.03.1993(Ac)	07.03.2006(Ac)	07.03.2006(Ac)	07.03.2006(Ac)
Dominican Republic			18.05.1993(Ac)	18.05.1993(Ac)	24.12.2001(Ac)	24.12.2001(Ac)	01.10.2009(Ac)	01.10.2009(Ac)
Ecuador			10.04.1990(Ac)	30.04.1990(Ac)	23.02.1993(R)	24.11.1993(At)	16.02.2007(Ac)	
Egypt	22.03.1985	16.09.1987	09.05.1988(R)	02.08.1988(R)	13.01.1993(R)	28.06.1994(R)	20.07.2000(R)	06.03.2009(R)
El Salvador			02.10.1992(Ac)	02.10.1992(Ac)	08.12.2000(Ac)	08.12.2000(Ac)	08.12.2000(Ac)	13.11.2007(Ac)
Equatorial Guinea			17.08.1988(Ac)	06.09.2006(Ac)	11.07.2007(Ac)	11.07.2007(Ac)	11.07.2007(Ac)	11.07.2007(Ac)
Eritrea			10.03.2005(Ac)	10.03.2005(Ac)	05.07.2005(Ac)	05.07.2005(Ac)	05.07.2005(Ac)	05.07.2005(Ac)
Estonia			17.10.1996(Ac)	17.10.1996(Ac)	12.04.1999(R)	12.04.1999(R)	11.04.2003(Ac)	22.12.2003(R)
Ethiopia			11.10.1994(Ac)	11.10.1994(Ac)				
European Community	22.03.1985	16.09.1987	17.10.1988(Ap)	16.12.1988(Ap)	20.12.1991(Ap)	20.11.1995(Ap)	17.11.2000(Ap)	25.03.2002(Ap)
Fiji			23.10.1989(Ac)	23.10.1989(Ac)	09.12.1994(Ac)	17.05.2000(Ac)	19.02.2007(Ac)	19.02.2007(Ac)
Finland	22.03.1985	16.09.1987	26.09.1986(R)	23.12.1988(R)	20.12.1991(Ac)	16.11.1993(At)	18.06.2001(At)	18.06.2001(At)
France	22.03.1985	16.09.1987	04.12.1987(Ap)	28.12.1988(Ap)	12.02.1992(Ap)	03.01.1996(Ap)	25.07.2003(Ap)	25.07.2003(Ap)
Gabon			09.02.1994(Ac)	09.02.1994(Ac)	04.12.2000(Ac)	04.12.2000(Ac)	04.12.2000(Ac)	04.12.2000(Ac)
Gambia			25.07.1990(Ac)	25.07.1990(Ac)	13.03.1995(R)	30.04.2008(R)	30.04.2008(R)	30.04.2008(R)
Georgia			21.03.1996(Ac)	21.03.1996(Ac)	12.07.2000(Ac)	12.07.2000(Ac)	12.07.2000(Ac)	
Germany ⁶	22.03.1985	16.09.1987	30.09.1988(R)	16.12.1988(R)	27.12.1991(R)	28.12.1993(R)	05.01.1999(R)	28.10.2002(R)
Ghana		16.09.1987	24.07.1989(Ac)	24.07.1989(R)	24.07.1992(R)	09.04.2001(R)	08.08.2005(Ac)	08.08.2005(Ac)
Greece	22.03.1985	29.10.1987	29.12.1988(R)	29.12.1988(R)	11.05.1993(R)	30.01.1995(R)	27.01.2006(R)	27.01.2006(R)
Grenada			31.03.1993(Ac)	31.03.1993(Ac)	07.12.1993(Ac)	20.05.1999(Ac)	20.05.1999(Ac)	12.01.2004(Ac)
Guatemala			11.09.1987(Ac)	07.11.1989(Ac)	21.01.2002(Ac)	21.01.2002(Ac)	21.01.2002(Ac)	21.01.2002(Ac)
Guinea			25.06.1992(Ac)	25.06.1992(Ac)	25.06.1992(Ac)			
Guinea-Bissau			12.11.2002(Ac)	12.11.2002(Ac)	12.11.2002(Ac)	12.11.2002(Ac)	12.11.2002(Ac)	12.11.2002(Ac)
Guyana			12.08.1993(Ac)	12.08.1993(Ac)	23.07.1999(At)	23.07.1999(At)	23.07.1999(At)	02.06.2008(At)
Haiti			29.03.2000(Ac)	29.03.2000(Ac)	29.03.2000(Ac)	29.03.2000(Ac)	29.03.2000(Ac)	

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Holy See			05.05.2008(Ac)	05.05.2008(Ac)	05.05.2008(Ac)	05.05.2008(Ac)	05.05.2008(Ac)	05.05.2008(Ac)
Honduras			14.10.1993(Ac)	14.10.1993(Ac)	24.01.2002(R)	24.01.2002(R)	14.09.2007(Ac)	14.09.2007(Ac)
Hungary			04.05.1988(Ac)	20.04.1989(Ac)	09.11.1993(Ap)	17.05.1994(Ac)	26.07.1999(R)	23.04.2002(Ap)
Iceland			29.08.1989(Ac)	29.08.1989(Ac)	16.06.1993(Ac)	15.03.1994(R)	08.02.2000(R)	31.03.2004(R)
India			18.03.1991(Ac)	19.06.1992(Ac)	19.06.1992(Ac)	03.03.2003(Ac)	03.03.2003(Ac)	03.03.2003(Ac)
Indonesia		21.07.1988	26.06.1992(Ac)	26.06.1992(R)	26.06.1992(Ac)	10.12.1998(Ac)	26.01.2006(R)	26.01.2006(R)
Iran (Islamic Republic of)			03.10.1990(Ac)	03.10.1990(Ac)	04.08.1997(At)	04.08.1997(At)	17.10.2001(At)	
Iraq			25.06.2008(Ac)	25.06.2008(Ac)	25.06.2008(Ac)	25.06.2008(Ac)	25.06.2008(Ac)	25.06.2008(Ac)
Ireland		15.09.1988	15.09.1988(Ac)	16.12.1988(R)	20.12.1991(At)	16.04.1996(At)	06.10.2005(At)	06.10.2005(At)
Israel ²		14.01.1988	30.06.1992(Ac)	30.06.1992(R)	30.06.1992(R)	05.04.1995(R)	28.05.2003(R)	15.04.2004(R)
Italy	22.03.1985	16.09.1987	19.09.1988(R)	16.12.1988(R)	21.02.1992(Ap)	04.01.1995(R)	01.05.2001(R)	22.10.2004(R)
Jamaica			31.03.1993(Ac)	31.03.1993(Ac)	31.03.1993(Ac)	06.11.1997(R)	24.09.2003(Ac)	24.09.2003(Ac)
Japan		16.09.1987	30.09.1988(Ac)	30.09.1988(At)	04.09.1991(At)	20.12.1994(At)	30.08.2002(At)	30.08.2002(At)
Jordan			31.05.1989(Ac)	31.05.1989(Ac)	12.11.1993(R)	30.06.1995(R)	03.02.1999(R)	01.02.2001(R)
Kazakhstan			26.08.1998(Ac)	26.08.1998(Ac)	26.07.2001(Ac)			
Kenya		16.09.1987	09.11.1988(Ac)	09.11.1988(R)	27.09.1994(R)	27.09.1994(R)	12.07.2000(R)	
Kiribati			07.01.1993(Ac)	07.01.1993(Ac)	09.08.2004(Ac)	09.08.2004(Ac)	09.08.2004(Ac)	09.08.2004(Ac)
Kuwait			23.11.1992(Ac)	23.11.1992(Ac)	22.07.1994(Ac)	22.07.1994(Ac)	13.06.2003(Ac)	30.07.2007(Ac)
Kyrgyzstan			31.05.2000(Ac)	31.05.2000(Ac)	13.05.2003(R)	13.05.2003(R)	13.05.2003(R)	05.10.2005(R)
Lao People's Democratic Republic			21.08.1998(Ac)	21.08.1998(Ac)	28.06.2006(Ac)	28.06.2006(Ac)	28.06.2006(Ac)	28.06.2006(Ac)
Latvia			28.04.1995(Ac)	28.04.1995(Ac)	02.11.1998(At)	02.11.1998(At)	14.06.2002(At)	09.07.2004(At)
Lebanon			30.03.1993(Ac)	31.03.1993(Ac)	31.03.1993(Ac)	31.07.2000(Ac)	31.07.2000(Ac)	21.11.2008(Ac)
Lesotho			25.03.1994(Ac)	25.03.1994(Ac)				
Liberia			15.01.1996(Ac)	15.01.1996(Ac)	15.01.1996(Ac)	15.01.1996(Ac)	30.11.2004(Ac)	30.11.2004(Ac)
Libyan Arab Jamahiriya			11.07.1990(Ac)	11.07.1990(Ac)	12.07.2001(Ac)	24.09.2004(Ac)		
Liechtenstein			08.02.1989(Ac)	08.02.1989(Ac)	24.03.1994(R)	22.11.1996(Ac)	23.12.2003(At)	23.12.2003(At)
Lithuania			18.01.1995(Ac)	18.01.1995(Ac)	03.02.1998(R)	03.02.1998(R)	17.03.2004(At)	17.03.2004(At)
Luxembourg	17.04.1985	29.01.1988	17.10.1988(R)	17.10.1988(R)	20.05.1992(R)	09.05.1994(R)	08.02.1999(R)	22.01.2001(R)
Madagascar			07.11.1996(Ac)	07.11.1996(Ac)	16.01.2002(Ac)	16.01.2002(Ac)	16.01.2002(Ac)	16.01.2002(Ac)

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Malawi			09.01.1991(Ac)	09.01.1991(Ac)	08.02.1994(At)	28.02.1994(Ac)	27.02.2009(R)	27.02.2009(R)
Malaysia			29.08.1989(Ac)	29.08.1989(Ac)	16.06.1993(Ac)	05.08.1993(Ac)	26.10.2001(R)	26.10.2001(R)
Maldives		12.07.1988	26.04.1988(Ac)	16.05.1989(R)	31.07.1991(R)	27.09.2001(R)	27.09.2001(R)	03.09.2002(Ac)
Mali			28.10.1994(Ac)	28.10.1994(Ac)	28.10.1994(Ac)	07.03.2003(At)	07.03.2003(At)	25.03.2004(At)
Malta		15.09.1988	15.09.1988(Ac)	29.12.1988(R)	04.02.1994(Ap)	22.12.2003(At)	22.12.2003(At)	22.12.2003(At)
Marshall Islands			11.03.1993(Ac)	11.03.1993(Ac)	11.03.1993(Ac)	24.05.1993(Ac)	27.01.2003(Ac)	19.05.2004(Ac)
Mauritania			26.05.1994(Ac)	26.05.1994(Ac)	22.07.2005(At)	22.07.2005(At)	22.07.2005(At)	
Mauritius ⁸			18.08.1992(Ac)	18.08.1992(Ac)	20.10.1992(Ac)	30.11.1993(R)	24.03.2003(At)	24.03.2003(At)
Mexico	01.04.1985	16.09.1987	14.09.1987(R)	31.03.1988(At)	11.10.1991(At)	16.09.1994(At)	28.07.2006(At)	12.09.2007(At)
Micronesia (Federated States of)			03.08.1994(Ac)	06.09.1995(Ac)	27.11.2001(Ac)	27.11.2001(Ac)	27.11.2001(Ac)	27.11.2001(Ac)
Monaco			12.03.1993(Ac)	12.03.1993(Ac)	12.03.1993(Ac)	15.06.1999(At)	26.07.2001(At)	03.04.2003(At)
Mongolia			07.03.1996(Ac)	07.03.1996(Ac)	07.03.1996(Ac)	07.03.1996(Ac)	28.03.2002(R)	24.06.2008(R)
Montenegro			23.10.2006(Sc)	23.10.2006(Sc)	23.10.2006(Sc)	23.10.2006(Sc)	23.10.2006(Sc)	23.10.2006(Sc)
Morocco	07.02.1986	07.01.1988	28.12.1995(R)	28.12.1995(R)	28.12.1995(Ac)	28.12.1995(Ac)		
Mozambique			09.09.1994(Ac)	09.09.1994(Ac)	09.09.1994(Ac)	09.09.1994(Ac)		
Myanmar			24.11.1993(Ac)	24.11.1993(Ac)	24.11.1993(Ac)	22.05.2009(Ac)		
Namibia			20.09.1993(Ac)	20.09.1993(Ac)	06.11.1997(R)	28.07.2003(At)	01.10.2007(At)	01.10.2007(At)
Nauru			12.11.2001(Ac)	12.11.2001(Ac)	10.09.2004(Ac)	10.09.2004(Ac)	10.09.2004(Ac)	10.09.2004(Ac)
Nepal			06.07.1994(Ac)	06.07.1994(Ac)	06.07.1994(Ac)			
Netherlands ⁹	22.03.1985	16.09.1987	28.09.1988(Ac)	16.12.1988(At)	20.12.1991(At)	25.04.1994(Ac)	21.02.2000(At)	13.11.2001(At)
New Zealand ¹⁰	21.03.1986	16.09.1987	02.06.1987(R)	21.07.1988(R)	01.10.1990(At)	04.06.1993(R)	03.06.1999(R)	08.06.2001(R)
Nicaragua			05.03.1993(Ac)	05.03.1993(Ac)	13.12.1999(R)	13.12.1999(R)		
Niger			09.10.1992(Ac)	09.10.1992(Ac)	11.01.1996(Ac)	08.10.1999(R)	08.10.1999(R)	25.08.2005(R)
Nigeria			31.10.1988(Ac)	31.10.1988(Ac)	27.09.2001(R)	27.09.2001(R)	27.09.2001(R)	24.05.2004(R)
Niue			22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)	22.12.2003(Ac)
Norway	22.03.1985	16.09.1987	23.09.1986(R)	24.06.1988(R)	18.11.1991(R)	03.09.1993(R)	30.12.1998(R)	29.11.2001(R)
Oman			30.06.1999(Ac)	30.06.1999(Ac)	05.08.1999(Ac)	05.08.1999(Ac)	19.01.2005(R)	19.01.2005(R)
Pakistan			18.12.1992(Ac)	18.12.1992(Ac)	18.12.1992(Ac)	17.02.1995(R)	02.09.2005(R)	02.09.2005(R)
Palau			29.05.2001(Ac)	29.05.2001(Ac)	29.05.2001(Ac)	29.05.2001(Ac)	29.05.2001(Ac)	29.05.2001(Ac)
Panama		16.09.1987	13.02.1989(Ac)	03.03.1989(R)	10.02.1994(R)	04.10.1996(Ac)	05.03.1999(R)	05.12.2001(R)

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Papua New Guinea			27.10.1992(Ac)	27.10.1992(Ac)	04.05.1993(Ac)	07.10.2003(Ac)		
Paraguay			03.12.1992(Ac)	03.12.1992(Ac)	03.12.1992(Ac)	27.04.2001(R)	27.04.2001(R)	18.07.2006(Ac)
Peru	22.03.1985		07.04.1989(R)	31.03.1993(Ac)	31.03.1993(Ac)	07.06.1999(Ac)	20.05.2008(Ac)	
Philippines		14.09.1988	17.07.1991(Ac)	17.07.1991(R)	09.08.1993(R)	15.06.2001(R)	23.05.2006(R)	23.05.2006(R)
Poland			13.07.1990(Ac)	13.07.1990(Ac)	02.10.1996(Ac)	02.10.1996(Ac)	06.12.1999(R)	13.04.2006(R)
Portugal ¹¹		16.09.1987	17.10.1988(Ac)	17.10.1988(R)	24.11.1992(R)	24.02.1998(R)	03.10.2003(R)	08.05.2006(R)
Qatar			22.01.1996(Ac)	22.01.1996(Ac)	22.01.1996(Ac)	22.01.1996(Ac)	29.1.2009(R)	29.1.2009(R)
Republic of Korea			27.02.1992(Ac)	27.02.1992(Ac)	10.12.1992(Ac)	02.12.1994(At)	19.08.1998(At)	09.01.2004(At)
Republic of Moldova			24.10.1996(Ac)	24.10.1996(Ac)	25.06.2001(Ac)	25.06.2001(Ac)	24.05.2005(Ac)	05.12.2006(Ac)
Romania			27.01.1993(Ac)	27.01.1993(Ac)	27.01.1993(Ac)	28.11.2000(At)	21.05.2001(R)	17.11.2005(At)
Russian Federation ¹²	22.03.1985	29.12.1987	18.06.1986(At)	10.11.1988(At)	13.01.1992(At)	14.12.2005(At)	14.12.2005(At)	14.12.2005(At)
Rwanda			11.10.2001(Ac)	11.10.2001(Ac)	07.01.2004(Ac)	07.01.2004(Ac)	07.01.2004(Ac)	07.01.2004(Ac)
Samoa			21.12.1992(Ac)	21.12.1992(Ac)	04.10.2001(At)	04.10.2001(At)	04.10.2001(At)	04.10.2001(At)
San Marino			23.04.2009(Ac)	23.04.2009(Ac)	23.04.2009(Ac)	23.04.2009(Ac)	23.04.2009(Ac)	23.04.2009(Ac)
Sao Tome and Principe			19.11.2001(Ac)	19.11.2001(Ac)	19.11.2001(Ac)	19.11.2001(Ac)	19.11.2001(Ac)	19.11.2001(Ac)
Saudi Arabia			01.03.1993(Ac)	01.03.1993(Ac)	01.03.1993(Ac)	01.03.1993(Ac)		
Senegal		16.09.1987	19.03.1993(Ac)	06.05.1993(R)	06.05.1993(R)	12.08.1999(Ac)	12.08.1999(Ac)	08.10.2003(R)
Serbia ¹⁴			12.03.2001(Sc)	12.03.2001(Sc)	22.03.2005(Ac)	22.03.2005(Ac)	22.03.2005(Ac)	22.03.2005(Ac)
Seychelles			06.01.1993(Ac)	06.01.1993(Ac)	06.01.1993(Ac)	27.05.1993(R)	26.08.2002(Ac)	26.08.2002(Ac)
Sierra Leone			29.08.2001(Ac)	29.08.2001(Ac)	29.08.2001(Ac)	29.08.2001(Ac)	29.08.2001(Ac)	29.08.2001(Ac)
Singapore			05.01.1989(Ac)	05.01.1989(Ac)	02.03.1993(Ac)	22.09.2000(Ac)	22.09.2000(Ac)	10.01.2007(Ac)
Slovakia			28.05.1993(Sc)	28.05.1993(Sc)	15.04.1994(Ap)	08.01.1998(Ac)	03.11.1999(Ap)	22.05.2002(R)
Slovenia			06.07.1992(Sc)	06.07.1992(Sc)	08.12.1992(At)	13.11.1998(At)	15.11.1999(R)	23.01.2003(R)
Solomon Islands			17.06.1993(Ac)	17.06.1993(Ac)	17.08.1999(Ac)	17.08.1999(Ac)	17.08.1999(Ac)	
Somalia			01.08.2001(Ac)	01.08.2001(Ac)	01.08.2001(Ac)	01.08.2001(Ac)	01.08.2001(Ac)	01.08.2001(Ac)
South Africa			15.01.1990(Ac)	15.01.1990(Ac)	12.05.1992(Ac)	13.03.2001(Ac)	11.11.2004(Ac)	11.11.2004(Ac)
Spain		21.07.1988	25.07.1988(Ac)	16.12.1988(R)	19.05.1992(At)	05.06.1995(At)	11.05.1999(At)	19.02.2002(At)
Sri Lanka			15.12.1989(Ac)	15.12.1989(Ac)	16.06.1993(Ac)	07.07.1997(Ac)	20.08.1999(Ac)	27.11.2002(Ac)
St. Kitts and Nevis			10.08.1992(Ac)	10.08.1992(Ac)	08.07.1998(Ac)	08.07.1998(R)	25.02.1999(R)	08.01.2009(R)

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
St. Lucia			28.07.1993(Ac)	28.07.1993(Ac)	24.08.1999(Ac)	24.08.1999(Ac)	24.08.1999(Ac)	12.12.2001(R)
St. Vincent and the Grenadines			02.12.1996(Ac)	02.12.1996(Ac)	02.12.1996(Ac)	02.12.1996(Ac)	11.05.2009(Ac)	11.05.2009(Ac)
Sudan			29.01.1993(Ac)	29.01.1993(Ac)	02.01.2002(Ac)	02.01.2002(Ac)	18.05.2004(Ac)	18.05.2004(Ac)
Suriname			14.10.1997(Ac)	14.10.1997(Ac)	29.03.2006(Ac)	29.03.2006(Ac)	29.03.2006(Ac)	29.03.2006(Ac)
Swaziland			10.11.1992(Ac)	10.11.1992(Ac)	16.12.2005(Ac)	16.12.2005(Ac)	16.12.2005(Ac)	16.12.2005(Ac)
Sweden	22.03.1985	16.09.1987	26.11.1986(R)	29.06.1988(R)	02.08.1991(R)	09.08.1993(R)	12.07.1999(R)	28.03.2002(R)
Switzerland	22.03.1985	16.09.1987	17.12.1987(R)	28.12.1988(R)	16.09.1992(R)	16.09.1996(R)	28.08.2002(R)	28.08.2002(R)
Syrian Arab Republic			12.12.1989(Ac)	12.12.1989(Ac)	30.11.1999(Ac)	30.11.1999(Ac)	30.11.1999(Ac)	
Tajikistan			06.05.1996(Ac)	07.01.1998(Ac)	07.01.1998(Ac)	07.05.2009(Ac)	07.05.2009(Ac)	07.05.2009(Ac)
Thailand		15.09.1988	07.07.1989(Ac)	07.07.1989(R)	25.06.1992(R)	01.12.1995(R)	23.06.2003(R)	14.11.2006(R)
The Former Yugoslav Republic of Macedonia			10.03.1994(Sc)	10.03.1994(Sc)	09.11.1998(R)	09.11.1998(R)	31.08.1999(Ac)	23.05.2002(Ac)
Timor-Leste			16.09.2009(Ac)	16.09.2009(Ac)	16.09.2009(Ac)	16.09.2009(Ac)	16.09.2009(Ac)	16.09.2009(Ac)
Togo		16.09.1987	25.02.1991(Ac)	25.02.1991(R)	06.07.1998(At)	06.07.1998(At)	26.11.2001(At)	26.11.2001(At)
Tonga			29.07.1998(Ac)	29.07.1998(Ac)	26.11.2003(R)	26.11.2003(R)	26.11.2003(R)	26.11.2003(R)
Trinidad and Tobago			28.08.1989(Ac)	28.08.1989(Ac)	10.06.1999(R)	10.06.1999(R)	10.06.1999(R)	29.10.2003(R)
Tunisia			25.09.1989(Ac)	25.09.1989(Ac)	15.07.1993(Ac)	02.02.1995(Ac)	19.10.1999(R)	16.05.2005(Ac)
Turkey			20.09.1991(Ac)	20.09.1991(Ac)	13.04.1995(R)	10.11.1995(R)	24.10.2003(R)	24.10.2003(R)
Turkmenistan			18.11.1993(Ac)	18.11.1993(Ac)	15.03.1994(Ac)	28.03.2008(Ac)	28.03.2008(Ac)	28.03.2008(Ac)
Tuvalu			15.07.1993(Ac)	15.07.1993(Ac)	31.08.2000(At)	31.08.2000(At)	31.08.2000(At)	04.10.2004(At)
Uganda		15.09.1988	24.06.1988(Ac)	15.09.1988(R)	20.01.1994(R)	22.11.1999(Ac)	23.11.1999(Ac)	27.07.2007(Ac)
Ukraine	22.03.1985	18.02.1988	18.06.1986(At)	20.09.1988(At)	06.02.1997(R)	04.04.2002(R)	04.05.2007(R)	04.05.2007(R)
United Arab Emirates			22.12.1989(Ac)	22.12.1989(Ac)	16.02.2005(Ac)	16.02.2005(Ac)	16.02.2005(Ac)	16.02.2005(Ac)
United Kingdom of Great Britain and Northern Ireland ¹³	20.05.1985	16.09.1987	15.05.1987(R)	16.12.1988(R)	20.12.1991(R)	04.01.1995(R)	12.10.2001(R)	12.10.2001(R)
United Republic of Tanzania			07.04.1993(Ac)	16.04.1993(Ac)	16.04.1993(Ac)	06.12.2002(R)	06.12.2002(R)	06.12.2002(R)
United States of America	22.03.1985	16.09.1987	27.08.1986(R)	21.04.1988(R)	18.12.1991(R)	02.03.1994(R)	01.10.2003(R)	01.10.2003(R)
Uruguay			27.02.1989(Ac)	08.01.1991(Ac)	16.11.1993(R)	03.07.1997(Ac)	16.02.2000(Ac)	09.09.2003(Ac)

	Signature	Signature	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*	Ratification*
Party	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Uzbekistan			18.05.1993(Ac)	18.05.1993(Ac)	10.06.1998(Ac)	10.06.1998(Ac)	31.10.2006(R)	31.10.2006(R)
Vanuatu			21.11.1994(Ac)	21.11.1994(Ac)	21.11.1994(At)	21.11.1994(At)		
Venezuela (Bolivarian Republic of)		16.09.1987	01.09.1988(Ac)	06.02.1989(R)	29.07.1993(R)	10.12.1997(R)	13.05.2002(R)	22.12.2006(R)
Viet Nam			26.01.1994(Ac)	26.01.1994(Ac)	26.01.1994(Ac)	26.01.1994(Ac)	03.12.2004(R)	03.12.2004(R)
Yemen			21.02.1996(Ac)	21.02.1996(Ac)	23.04.2001(Ac)	23.04.2001(Ac)	23.04.2001(Ac)	13.10.2009(Ac)
Zambia			24.01.1990(Ac)	24.01.1990(Ac)	15.04.1994(R)	11.10.2007(Ac)	11.10.2007(Ac)	11.10.2007(Ac)
Zimbabwe			03.11.1992(Ac)	03.11.1992(Ac)	03.06.1994(R)	03.06.1994(R)		
	Vienna Convention	Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
Total	28	46	196	196	193	190	178	160

Notes

R: Ratification Ac: Accession At: Acceptance Ap: Approval Sc: Succession

* Entry into force is after ninety days following the date of ratification/accession/acceptance/approval for new Parties after the treaty enters into force.

Vienna Convention (22.9.1988);
Montreal Protocol (1.1.1989);
London Amendment (10.8.1992);
Copenhagen Amendment (14.6.1994);
Montreal Amendment (10.11.1999);
Beijing Amendment (25.2.2002).