出國報告（出國類別：出席國際會議）

出席「蒙特婁議定書第三十六次締約方會議」報告

出國人員服務機關及姓名職稱：環境部氣候變遷署盧佩君科長
派赴國家：泰國
出國期間：**113** 年 **10** 月 **27** 日至 **11** 月 **1** 日
報告日期：**114** 年 **1** 月 **20** 日

摘要

今（2024）年於 10 月 28 至 11 月 01 日假泰國曼谷聯合國會議中心（United Nations Conference Center）召開保護臭氧層維也納公約第 13 次締約方會議(以下簡稱 COP 13,約每三年召開一次）暨蒙特婁議定書第 36 次締約方會議（簡稱 MOP 36，每年召開一次），本次會議計有超過 200 多個國家及民間單位參與。

本次會議辦理直至 2024 年 11 月 01 日星期五晚上 9 點 45 分宣布結束，其中，維也納公約部分共產出 4 個決議，蒙特婁公約共計產出 23 個決議內容，各項決議中值得我國持續關注之決議及其後續發展包括：

1. 鑑於蒙特婁議定書吉佳利修正案通過將屆滿 10 周年，目前批准吉佳利修正案的 160 個締約方,已有 154 個締約方建立氫氟碳化物 (HFCs) 之管理與許可制度，但仍有安哥拉、巴林王國、吉布地共和國、肯亞、聖馬利諾共和國及阿拉伯聯合大公國等 6 個締約方未依吉佳利修正案規定建立相關制度；聯合國環境規劃署臭氧秘書處敦促前述尚未有許可制度之締約方,最遲應於 2025 年 3 月 31 日提報建立HFCs許可制度相關進展。

2. 蒙特婁議定書之技術與經濟評估委員會 (Technology and Economic Assessment Panel, TEAP) 於會議中進行全球 HFC-23 排放評估報告,說明大氣觀測到之 HFC-23 濃度遠高於締約方所申報之消費量數據，TEAP 認為大部分的 HFC-23 排放仍有不明的其他來源。會議決議邀請締約方及科學機構進行 HFCs 的大氣監測和源頭研究。此外，並同時要求 TEAP 提供 HFC-23 作為副產品之排放監測、估算、報告和銷毀的最佳實踐指引資訊。

3. 另決議請具生產 HCFCs 或 HFCs 設施的締約方，自發性在 2025 年 3 月 31 日前於排放申報表格 6 填寫各項設施產生的 HFC-23 排放量及估算方法。

4. 臭氧秘書處邀請已限制含列管化學物質及低效能源產品設備進口的締約方，自願提供針對含列管化學物質的產品和設備的國家政策、標準或法規資料，並提供規範中所涉及的產

品或設備類別，後續將於秘書處網站上公布所蒐集的資訊清單。

5. 為加強議定書的執行，對於管制物質非法貿易遏止，將由彙整各締約方許可制度的匯編開始著手，並就締約方實際執行打擊非法走私情形，提交至不限成員名額工作小組 (Open-ended Working Group，OEWG) 第 47 次工作會議審議。

另本次會議我團特別針對吉佳利修正案所管制之 HFCs 使用於半導體製程之消費量認定、冷媒的回收管理以及冷媒銷毀及其他蒙特婁議定書關注之相關議題等議題，分別與 TEAP 專家、韓國產業代表、美國、日本與泰國等各締約方代表以及進行資訊交流，可作為我國後續研訂 HFCs 管制措施、冷媒回收管理等策略與精進冷媒銷毀技術之重要參考依據，並就溫室氣體減量推動實務之交流，建立未來合作聯繫管道。

目錄

壹、前言

「蒙特婁議定書」是聯合國為了避免工業產品中的氟氯碳化物對地球臭氧層繼續造成惡化及損害，承續 1985 年保護臭氧層維也納公約的大原則，於 1987 年 9 月 16 日邀請所屬 26 個會員國在加拿大蒙特婁所簽署的環境保護議定書，以管制臭氧層破壞物質(Ozone Depleting Substances，ODSs)。

該議定書自 1989 年 1 月 1 日起生效後，聯合國環境規劃署(United Nations Environment Programme，UNEP) 臭氧秘書處隨即每年召開 1 次締約方會議 (Meeting of the Parties，MOP)，檢討議定書執行的現況、並協商其他 ODSs 的管制方案及討論衍生的管制議題。如有增加新的管制方案與物質，締約方會議會產出修正案(Amendments)；若無新增管制項目，僅是加嚴現有管制方案，締約方會議則會產出調整案 (Adjustments)，截至目前為止，蒙特婁議定書共計產出 5 個修正案與 14 個調整案。

其中，最新之「吉佳利修正案」 (Kigali Agreement) 係基於蒙特婁議定書自 1996 年開始管制氟氯碳化物 (CFCs) 與氟氯烴(Hydrochlorofluorocarbons，HCFCs) 後，主要推動的冷媒替代品為氫氟碳化物 (HFCs)，其中包括 HFC-134a、HFC-410A、HFC-404A 等各類純物質及其混合物。這些替代品雖無臭氧層破壞潛勢 (Ozone Depletion Potential，ODP)，但卻屬於高溫暖化潛勢 (Global Warming Potential，GWP) 物質，排放到大氣之後會加劇全球暖化與氣候變遷問題，亦為我國氣候變遷法所明定之溫室氣體之一；因此，於 2016 年第 28 次締約方會議 (MOP 28) 上，通過「吉佳利修正案」，將HFCs納為公約管制物質並訂定各締約方應遵守的削減時程，其管制削減的方式，依循 CFCs 與 HCFCs 削減模式，從源頭（生產與進口）逐步削減 HFCs 的消費量與生產量。

我國雖非聯合國會員國而無法成為蒙特婁議定書締約方，但為避免國內產業受到貿易阻礙，已依循蒙特婁議定書相關規定，陸續發布「蒙特婁議定書列管化學物質管理辦法」、「氟氯烴消費量管理辦法」以及「溴化甲烷管理辦法」，以管制我國 CFCs、海龍、HCFCs

以及溴化甲烷等破壞臭氧層物質之進出口與製造等行為，目前亦加速辦理氟氯碳化物相關法規草案之法制作業。此外我國亦自 1990 年起，每年以財團法人工業技術研究院之非政府組織 (Non-governmental organization，NGOs) 身分，派員出席蒙特婁議定書締約方會議，以掌握蒙特婁議定書最新管制趨勢，及參與周邊相關會議，據以滾動檢討我國相關法令與管制作為，並運用此一場合與相關國家及民間機構進行交流，進一步向國際間展現我國遵循國際公約之管制作為與成效。

本次所參加的蒙特婁議定書第 36 次締約國會議 (MOP 36) 除討論眾多議案外，面對吉佳利修正案生效將屆滿 10 年，更提出了多項關於改進申報數據、加強區域監測及回收管理的倡議，同時亦展望未來，強調如何協調各方以解決溫室氣體排放及提高能效之挑戰的溝通與討論。本署亦透過本次會議，初步學習國際公約會議的運作模式，並就溫室氣體減量推動實務，與相關國家代表團或技術專家等進行交流，建立未來合作聯繫管道，持續掌握國際間最新HFCs削減技術及最新管制趨勢。

貳、與會人員及行程

一、與會人員

本次由環境部氣候變遷署盧佩君科長代表參加，另駐泰國台北經濟文化辦事處政務組鄭舜丞副組長協助國外事務及報到，以及財團法人工業技術研究院楊斐喬經理及徐麗瀅工程師偕同與會參加，成員任務分工如表 1。

表 1、成員任務分工表

單位	職稱	姓名	任務分工
環境部氣候變遷署	科長	盧佩君	吉佳利修正案各國推動及管

			制現況資訊蒐集，對外交流及行政事務
外交部	駐泰國台北經濟文化辦事處政務組副組長	鄭舜丞	國外事務及報到
財團法人工業技術研究院	經理	楊斐喬	協助掌握會議執行進展、協助與國際友人聯絡交流、蒐集國際替代產品或技術進展
	工程師	徐麗瀅	

二、行程規劃

本次會議期間自 113 年 10 月 28 日至 113 年 11 月 1 日，共計 5 天，會議地點為泰國曼谷聯合國會議中心（United Nations Conference Center），會議行程如表 2所述。

表 2 會議行程表

日期	行程
10 月 27 日(日)	搭機前往泰國曼谷，預為準備會議資料
10 月 28 日(一)	**預備會議** (一) 完成會場報到 (二) 聯合國環境規劃署 (UNEP) 代表致歡迎詞，預備會議開幕 (三) 會議架構：確認預備會議討論議題項目、會議工作程序與架構 (四) 维也納公约信託基金和蒙特婁議定書信託基金預算與財務報告 (五) 蒙特婁議定書議題 1. 審議蒙特婁議定書下設各機構 2025 年成員 (1)不遵守蒙特婁議定書程序下設履行委員會成員 (2)執行蒙特婁議定書多邊基金執行委員會*

日期	行程
	(3)工作組共同主席 2.HFC-23 排放問題 (1)由科學評估委員會 (Scientific Assessment Panel，SAP) 及技術暨經濟評估委員 (Technology and Economic Assessment Panel，TEAP) 進行排放評估報告（第 XXXV/7 號決定第 1 和第 2 段） (2) HFC-23 申報表格 3.冷媒生命周期管理，包括冷媒生命周期管理工作坊成果（第 XXXV/11 號決定） 4.壽命極短物質討論 5.列管物質作為原料用途 6.強化蒙特婁議定書列管物質之全球與區域性監測 7.海龍替代品與其可取得性 8.技術暨經濟評估委員會 (TEAP) 審查 A5 國家遵約情形 9.能源效率議題 (1) 不進口低能源效率產品 (2) 強化設備能源效率 10. 蒙特婁議定書之豁免議題：溴化甲烷 2025 申請情形 11. 技術暨經濟評估委員會 (TEAP) 成員異動 12. 蒙特婁議定書吉佳利修正案批准情形
10 月 29 日(二)	**預備會議** (一) 接觸小組會議情形報告 1.列管物質作為原料用途 2.壽命極短物質 3.海龍替代品與其可取得性 4.強化蒙特婁議定書列管物質之全球與區域性監測 (二) 蒙特婁議定書議題討論 1.各締約方遵約與提交數據情形 2.將巴勒斯坦納入蒙特婁議定書第 5 條第 1 款之締約方，並獲得多邊基金支持 (三) HFC-23 排放問題 (四) 維也納公約議題 1.維也納公約締約方臭氧研究管理人員第 12 次會議報告 2.信託基金提供维也纳公约所涉研究和系统性觀測活動報

日期	行程
	告 (五) 其他事項與提案 1. HFCs 同分異構物 2. 展延第 5 條之締約方履行期限 3. 噴霧罐推進劑之低 GWP 替代品 4. HFC-23 申報表格 5. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構
10 月 30 日(三)	**預備會議** (一) 前日接觸小組討論之情形於大會報告 1. 展延第 5 條之締約方履行期限 2. HFC-23 申報表格 3. 冷媒生命周期管理 4. HFC-23 排放問題 5. 噴霧罐推進劑之低 GWP 替代品 6. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構 (二) 接觸小組會議討論議題 1. 能源效率議題 (1) 不進口低能源效率產品 (2) 強化設備能源效率 2. 壽命極短物質 3. 強化蒙特婁議定書列管物質之全球與區域性監測 4. 列管物質作為原料用途 5. 展延第 5 條之締約方履行期限 6. 噴霧罐推進劑之低 GWP 替代品 7. HFC-23 排放問題 8. HFC-23 申報表格 9. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構 10. 冷媒生命周期管理 11. 海龍之回收、再生及再利用
10 月 31 日(四)	**高階會議** (一) 開幕典禮：COP 12 主席、UNEP 副執行主任、泰國工業部部長代表致詞 (二) 會議架構：MOP 36 主席選舉、確認高階會議議程、會議工作

日期	行程
	(三) 程序與架構、各單位代表之到任文件（Credentials of representatives） (四) 各評估小組綜合報告 (五) 多邊基金執行委員會主席報告基金執行內容與進展 (六) 各國代表致詞 (七) 工作小組討論 1. 壽命極短物質 2. 強化蒙特婁議定書列管物質之全球與區域性監測 3. HFC-23 排放
11 月 1 日(五)	**高階會議** 1. MOP 36 預備會議決議結果說明 2. MOP 37 會議地點與時間 3. 其他事項 4. MOP 36 會議決議 5. MOP 36 會議決議確認通過 **由泰國曼谷搭機返國**

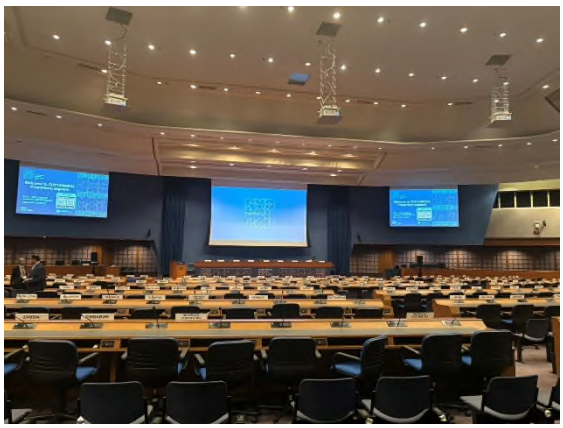


圖1、會議地點：泰國曼谷聯合國會議中心（United Nations Conference Center）

參、會議討論內容及決議

本次 MOP 36 我團以財團法人工業技術研究院之 NGOs 身分參加，於 2024 年 10 月 28 日順利完成報到並取得入場證，會議過程中除了參與 MOP 36 之主會場大會外，亦參加了周邊會議及有興趣之聯絡小組議題會議，以下重點摘要我國應持續關注之決議、議題及其後續發展如下:

一、MOP 36 會議討論內容及決議

本次會議維也納公約部分共產出 4 個決議，蒙特婁公約共計產出 23 個決議內容，我國應持續關注及追蹤後續發展之決議內容如下:

(一) HFC-23排放管理及修訂HFC-23數據報告格式

1. HFC-23排放管理：

第 XXXV/7 號決議已要求 SAP 及 TEAP 在大會提交 HFC-23 排放情形報告，本次會議中，SAP 及 TEAP 即依上開決議事項進行報告。依 SAP 說明，其研究報告顯示自 2014 年後，締約方所蒐集全球 HFC-23 排放量申報數據，與根據觀測得到的大氣中 HFC-23 排放估計值之間存在顯著差距，其中約有75-89%的排放量並未含括在申報數據資料中。此外，依據研究結果，推估中國在其申報數據以外的 HFC-23 排放量，便已佔了全球排放缺口至少 20-50%。

TEAP 報告中則說明 2022 年之全球消費量為 3684.3 公噸，而作為原料用途之數量為 1,070 公噸。假設排放係數為 2.1%，估算排放量約為 22 公噸。但大氣觀測到之 HFC-23 濃度遠高於締約方所申報之消費量數據，依觀測濃度推估，2022 年約排放達 14,000 公噸。因此，TEAP 目前認為大部分的 HFC-23 排放係基於不明的其他來源（現行已知 HFC-23 的用途別，則包括超低溫冷凍冷藏冷媒、滅火藥劑及半導體製程蝕刻清洗等）。考量 HFC-23 來源除原有認知的 HCFC 副產物以外，可能係由大氣中衍生或其他來源產出，目前因為沒有明確的研究資料，無法解釋這些差異性，但 TEAP 提出建議可修正申報表格 6 號來協助處理此一議題。在全體會議中進

行了長時間的問答環節後，美國和中國分別宣佈將與其他締約方合作提交會議文件 (conference room paper，CRP)。

美國與加拿大共同發起了 UNEP/OzL.Pro.36/CRP.7提案，該提案指出，根據會議中 SAP 及 TEAP 報告訊息，可得出的中國東部排放量估計值遠高於預期,要求相關方採取必要行動以履行 HFC-23 排放管理的義務，且需調查其申報排放量與大氣監測得出的排放量估計值之間存在偏差的潛在原因。

中國則提出了 UNEP/OzL.Pro.36/CRP.8文件，呼籲應加強對全球 HFC-23 排放和數據報告的研究；並邀請擁有 HCFC-22 生產設施的締約方自願報告其目前核算結果和申報 HFC-23 排放（包括逸散性排放）的方法；以及要求臭氧秘書處成立一個專家工作小組，研究和制定相關技術準則，供締約方申報 HFC-23 排放情形。

2 份 CRP 文件於會議中歷經了長時間的爭論，中國認為美國與加拿大的提案將一個全球問題定位為某一個締約國問題，對相關方是“不科學”、“不切實際”和“不尊重”的行為。美方則澄清 CRP.7 中概述的任何要求都並非強制性，後續美國亦承認 HFC-23 排放是一個全球性問題,但表示仍必須考慮有關特定區域排放的科學數據。

前開爭議後續決定成立聯絡小組進行 CRP.7 和 CRP.8 的討論,該聯絡小組由 Shontelle Wellington（巴巴多斯）和 Paul Krajnik（奧地利）共同主持，經過了 6 次小組會議的討論，最終於週五下午 6 點半，達成一致共識，將草案提交全體會議。

大會最終決定事項如下：

(1) 議定書締約方會議邀請相關方展開並鼓勵與科學研究機構合作進行 HFC-23 大氣監測和 HFC-23 排放源的研究,並分享相關結果。

(2) 請擁有 HCFC-22 生產設施的締約方在 2025 年 3 月 31 日之前自願向臭氧秘書處提交其目前估算的數據 並報告國內進行 HCFC-22 生產時，HFC-23 排放情形。

(3) 邀請已採用最佳技術減少 HFC-23 排放的締約方在 2025 年 3 月 31 日之前自願向臭氧秘書處提供此類資訊。

(4) 要求 SAP 更新關於 HFC-23 的第 XXXV/7 號決議報告

內容，以反映更多的即時新資訊，並就此事項於議定書締約方會議第 37 屆會議提交報告;另要求 TEAP 提供有關測量、估計、報告和驗證 HFC-23 副產品排放及其銷毀的最佳實踐和指引資料。

2. HFC-23 的數據申報表單修正：

在不限成員名額工作小組(Open-ended Working Group，OEWG)第 46 屆會議上，秘書處已提出了更改數據申報表 3（涉及生產數據）的建議，一些締約方也建議可更改數據申報表 4 （涉及銷毀）和數據申報表 6 （涉及 HFC-23 排放）。美國於本次會議上，提出會議文件提案包含修訂後的數據申報表，旨在使各不同的管制物質申報方式一致，後續成立了聯絡小組進行本提案討論。

聯絡小組共召開 4 次會議，討論內容包含提案方要求 TEAP 應提供的資訊;申報表格的架構；如何以申報表格反應製造、輸入或輸出，及銷毀並導出相關數據及資料。

最終議定書締約方會議批准了經修訂的數據申報表格 3 和申報表格 6，以及申報數據表格的填寫說明。

(二) 促進冷媒生命周期 (life-cycle refrigerant management，LRM)管理及相關工作坊成果

第一日會議中（週一），OEWG 聯合主席 Brieskorn 介紹了在大會前一日（10 月 27 日）所舉辦的促進冷媒生命周期管理工作坊成果，在工作坊會議中，一些締約方呼籲希望為第 5 條發展中國家提供財政支援，以培訓冷媒回收管理的技術人員，並購置回收和再利用的裝備，以及呼籲提供有關清除處理含有冷媒設備的資訊。

密克羅尼西亞聯邦 (FSM) 就該議題提出了一項決定草案，呼籲 TEAP 提供更多關於 LRM 的資訊，並請臭氧秘書處彙編線上 LRM 資料庫、強化締約方的 LRM 管理政策。OEWG 聯合主席 Brieskorn 建議就上述議題成立聯絡小組，由 Morgan Simpson （英國）和 Osvaldo Alvarez Perez （智利）共同擔任聯絡小組主持人。

該小組後續舉行了 4 場會議，最終在關於 LRM 的決定中，議定書決議要求 TEAP 在 2025 年及其後續進展報告（包括預計於 2026 年發布的 4 年期評估報告）中，納入有關各締約方或區域對

於 LRM 的最新相關信息，同時請執行委員會和秘書處繼續研議強化 LRM 的方法;要求秘書處彙編關於 LRM 的資訊並將其公布在網站上;鼓勵第 5 條締約方在制訂和實施基礎設施管理時，將 LRM 納入，進行整體考量。

(三) 針對極短壽命物質 very short-lived substances (VSLS) 的應對措施

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了極短壽命物質 very short-lived substances (VSLS) 議題，於 2024 年 TEAP 評估報告指出，極短壽命物質 very short-lived substances (VSLS) 涵蓋二氯甲烷、三氯甲烷、1,2-二氯乙烷、三氯乙烯及全氯乙烯等，這些物質非蒙特婁議定書管制物質，其臭氧層破壞潛勢 (Ozone Depletion Potential，ODP) 值極低但不為零，且在大氣的壽命不到 6 個月;儘管 VSLS 對平流層總氯濃度的貢獻度相對較小，但其貢獻度持續增加，2020 年約占平流層總氯濃度之 4%。後續於 Heidi Stockhaus （德國）和 Juan Jose Galeano （阿根廷）共同主持的聯絡小組中繼續審議此議題。

聯絡小組舉行了 3 場次會議討論關於 VSLS 的決定草案（UNEP/OzL.Pro.36/CRP.12）內容，與會代表一致認為需要更新有關二氯甲烷、三氯甲烷、二氯乙烷、三氯乙烯和全氯乙烯等五種 VSLS 在過去五年的增長趨勢與相關資料。另該聯絡小組討論了是否要求 TEAP 提供有關已確定的五種 VSLS 的臭氧消耗潛勢 （ODP） 和影響臭氧層的最新資訊。

締約方會議在 VSLS 的最終決定上，要求 TEAP 和 SAP 在 2026 年評估報告中納入有關討論 VSLS 資料並於 OEWG 第 49 次會議審議，其報告內容應包含：五種 VSLS 最新資訊，包括作為溶劑和原料用途，以及 VSLS 過去五年的增長趨勢、ODP 以及對平流層臭氧層的影響等；有關 VSLS 替代品的其他資訊；估計 VSLS 的年產量和消費量及年排放量；另請 SAP 評估 VSLS 的 ODP 及對平流層總氯輸入的貢獻，以及對平流層臭氧層的可量化影響。

(四) 管制物質的原料用途管理

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了管制物質的原料用途管理議題，並說明在管制物質的生產、運輸、分銷、

儲存、處理、重新包裝和用作原料過程中，應盡量減少其排放。

後續由 Ryan Ooi Chean Weai(馬來西亞)和 Michel Gauvin（加拿大）共同主持該議題的聯絡小組會議，聯絡小組於週三舉行公開會議，並於週四和週五在僅限締約方的情況下舉行會議。小組在會中討論了如何最大限度地減少排放及最佳可行控制技術相關問題，以及是否應建立一個資金窗口以支援生產製造相關的專案議題，以採行最佳可行控制技術，最大限度地減少用作原料的管制物質排放。

最後議定書締約方在管制物質的原料用途管理的決議事項如下：

1. 要求盡量減少管制物質在生產、運輸、分銷、儲存、處理、重新包裝和用作原料過程中的排放，或使用最佳可行控制技術，或採製程變更、縮減或銷毀來減少排放
2. 鼓勵各締約方依各國國情，參考使用 TEAP 於 2024 年進度報告中已提出的確定方法和技術，減少管制物質在生產、運輸、分銷、儲存、處理、重新包裝和用作其他化學品製造原料過程中的排放
3. 鼓勵擁有相關做法和技術的締約方向秘書處提供資訊，以協助締約方促進應用;
4. 邀請生產和使用受管制物質作為原料的締約方在 2025 年 5 月 1 日之前自願向秘書處提供資訊，說明其為管理此類生產和使用而建立的管制制度，包括由此產生的排放管制措施;並請秘書處整理所提供的資訊，提供 OEWG 第 47 次會議審議。

(五) 加強全球與區域大氣監測

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了這一議題並決議成立一個聯絡小組，由 Liana Ghahramanyan（亞美尼亞）和 Alessandro Giuliano Peru（義大利）共同主持。

該小組後續於締約方會議期間舉行了多場會議，重點包含了關注如何評估適宜之潛在監測點位方式;諮詢各締約方建置監測機制的流程;研析與其他相關機構共同出資以支應監測計畫方案;以及評估監測資金來源和所需金額範圍。

最後有關加強全球與區域大氣監測議案決定事項中，議定書締

約方會議要求秘書處評估適合監測管制物質的區域排放地點，並由蒙特婁議定書信託基金的現金餘額中撥款 400,000 美元支應;要求秘書處諮詢委員會研議可能的監測地點、如何利用現有設施並與其他可執行監測相關計畫的組織保持聯繫，並協調合作後續監測事項;要求執行委員會考量資助部分點位的監測專案，以加強大氣監測並於下次 MOP 37 會議中報告。

(六) 噴霧罐吸入器（MDIs）低溫暖化潛勢（GWP）替代品

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了這一議題，提出為了推動高 GWP 噴霧罐吸入器使用替代產品之過渡時期措施（第XXXVI/[D]號決定草案），決議成立一個聯絡小組，由 Henry Wöhrnschimmel （瑞士）和 Noe Megrelishvili （喬治亞）共同主持。該小組舉行共 4 場次會議，討論了向 TEAP 提出的繼續“監測”和更新 MDIs 及其替代品發展情況的要求，並提供有關低GWP的噴霧罐吸入器的最新資訊，包括其技術可行性、經濟可行性、安全性和在發展中國家的使用情形。

最終在關於使用低 GWP 的噴霧罐吸入器決定如下：

1. 邀請生產 MDIs 的締約方在 2025 年 6 月之前自願向秘書處提交關於使用低 GWP 的噴霧罐吸入器產品開發進展和其他替代品的可得性，以及過渡期間之相關經驗;
2. 要求 TEAP 繼續提供有關低 GWP 的噴霧罐吸入器產品的最新資訊，並補充於 2026 年之四年期評估報告中，包括關於其技術可行性、經濟可行性、安全性和第 5 條締約方的使用情形資訊;
3. 鼓勵締約方根據 TEAP 2026 年之4年期評估報告中提供的更新資訊，於 2027 年前重新審視各國 MDIs 採用低 GWP 替代品情形。

(七) 海龍及其替代品

第一日會議中（週一），OEWG 聯合主席 Brieskorn 介紹了這一議題並成立了一個聯絡小組，由 Andrew Clark （美國）和 Ali Tumayhi （沙烏地阿拉伯）擔任聯合主席。聯絡小組於週一晚上、週三和週四舉行會議，會議主要共識包含了各方應避免故意銷毀回收

的海龍，除非這些海龍無法後續再利用，另外對於是否應該“要求”或改用“鼓勵”各締約方回收海龍的部分，進行了持續性的辯論。

最終在關於回收或再利用海龍此議題相關決定中，議定書締約方會議委員會敦促締約方應避免銷毀可回收或再利用的海龍，並確保仍有足夠的回收或可再利用的海龍庫存,以滿足預期的未來需求，並邀請各締約方鼓勵利益關係者採取上述行動，內容如下：

1. 確保在維護和維修設備期間，或在拆卸和處置設備之前，回收海龍以進行回收和再利用
2. 重新考慮對回收海龍進出口的限制，以促進回收海龍的越境轉移和再利用，並且需兼顧《巴塞爾公約》的要求;
3. 提高對海龍可持續管理重要性的認識，在有替代品的情況下避免使用海龍，並告知消費者需要為未來海龍供應減少的風險做好準備。
4. 請臭氧秘書處就海龍可持續管理的重要性與相關國際機構聯絡，並向締約方報告。

(八) 第 5 條第 2 組之締約方履約情形：TEAP 技術評估報告決議

OEWG 聯合主席 Brieskorn 指出，在 OEWG 第 46 屆會議上，印度、巴林、科威特、卡達和沙烏地阿拉伯共同提出了一項決定草案（涉及第XXVIII/2號決定第5段內容），請 TEAP 提供關於氫氟碳化合物替代品的資訊，以提供第 5 條第 2 組締約方在凍結氫氟碳化合物消費量時參考使用。

聯合主席 Brieskorn 提議成立一個聯絡小組，由 Cornelius Rhein （歐盟）和 Ana Maria Kleymeyer （密克羅尼西亞聯邦）共同主持。該小組在週二、週三、週四和周五舉行會議，討論了 TEAP 提供哪些額外資訊，以及決定草案的標題文字是否修正以核實反映內容；TEAP 所提報告是否應指定更低的 GWP 物質替代方案;決定草案是否強調對象僅為第 5 條第 2 組締約方；以及是否在第 2 組締約方中納入有關過度期之資訊。

最終在關於根據第 XXVIII/2 號決定第 5 段，有關 TEAP 技術評估報告決議事項,議定書締約方會議要求 TEAP 在 2026 年的

4 年期評估報告，提供第 5 條第 2 組締約方有關低 GWP 之氫氟碳化合物替代品的最新情況，以便為氫氟碳化合物消費量凍結做準備，提供之資訊應包括下列內容：

1. 可採用性及其挑戰和障礙;

2. 考量不同國家/地區的設備容量、替代製冷劑和設備標準;

3. 市場結構以及供應鏈問題;

4. 應對採用替代方案的挑戰和障礙的備選方案;和

5. 關於採用替代方案的成本資訊。

(九) 打擊非法貿易及加強議定書機構的下一步行動

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了歐盟提出之 CRP 文件，要求臭氧秘書處分享有關管制物質非法生產和非法貿易的資訊，以加強議定書的執行並面對相關的挑戰。本議案決定成立一個聯絡小組，由 Fathmath Usra （馬爾地夫）和 Jana Maščková （捷克）共同主持。

最終在關於加強打擊非法貿易的議題中，議定書締約方會議決議如下：

1. 要求臭氧秘書處更新其對於第 XXXIV/8 決定第4段（b）的回應，確定各締約方已有許可管制的機制；辦理各締約方許可制度及實際執行案例的彙編；並將此信息提供給各締約方並於 OEWG 第 47 屆工作會議審議；

2. 邀請尚未有許可制度的締約方向秘書處提供其所規劃許可制度的資訊;

3. 要求秘書處在 OEWG 第 47 屆會議之前，提供締約方相關彙整資料，包含防止管制物質非法貿易的最佳做法，供議定書第 37 次締約方會議前舉辦一日非正式會議，討論如何落實蒙特婁議定書的執行。

(十) 防止進口依賴管制物質或低效能源產品設備

第一日會議中（週一），OEWG 聯合主席 Mohamed 決議成立一個聯絡小組，以繼續審議吉爾吉斯斯坦在 OEWG 第 46 屆會議上提出的決定草案，該草案邀請締約方分享有關限制進口低效能源

產品和設備的國家政策、標準和立法的資訊。

在 Morane Godfrin （法國）和 Baba Dramé （塞內加爾）的共同主持下，聯絡小組於週三和週四舉行了會議，討論了決定草案是否僅關注於低效能源設備，或是應根據第 XXVII/8 號決定，逐步淘汰包含HCFCs等管制物質的產品進口。並討論了發布禁止進口設備和產品清單的規定，以及建議不要進口低效能源性能標準的設備和產品。在討論過程中，有締約方表示決定草案應包括一份法律禁止進口清單，並強制要求締約方提供相關資訊。另有締約方代表建議應擴大決定草案的範圍，邀請各締約方自願分享進口產品和設備有關的任何資訊，包括與能源效率有關的議題。第三位締約方代表則指出，向締約方更新和傳達此類資訊可能會給秘書處帶來額外的作業負擔。

最終在防止進口依賴管制物質或低效能源產品設備決議如下：

1. 邀請已限制進口含有管制物質的產品和設備的締約方自願向秘書處提供這一資訊;
2. 邀請已有進口禁止管制物質產品和設備之國家政策、標準或立法的締約方，自願將此類政策、標準或立法告知秘書處，並說明有關設備的類別;
3. 要求秘書處在其網站上公佈根據上述信息清單，並向秘書處提交更新資訊。

(十一) HFCs 之同分異構物

依據 2022 年醫藥與化學技術委員會 (MBTOC) 評估報告指出，部分 HFCs 之同分異構物亦屬於高溫暖化潛勢氣體，例如 HFC-245cb 其 GWP 值為 4,510 至 4,550，遠高於 HFC-245ca（GWP 為693）與 HFC-245fa（GWP 為1030）等附件F列管物質，但目前尚未列入吉佳利修正案之列管物質；此議題在本次會議期間沒有充足的討論時間，將待後續會議再予以討論。

(十二) 吉佳利修正案批准現況

截至 2024 年 11 月 1 日，目前批准吉佳利修正案的 160 個締約方，已有 154 個締約方建立氫氟碳化物 (HFCs) 之管理與許可制度，但仍有安哥拉、巴林王國、吉布地共和國、肯亞、聖馬利諾共和國及阿拉伯聯合大公國等 6 個締約方未依吉佳利修正案規定建

立相關制度，其中，肯亞已主動於本次會議上說明該國目前已進行相關制度研擬中；臭氧秘書處敦促前述尚未有許可制度之締約方，最遲應於 2025 年 3 月 31 日提報建立 HFCs 許可制度相關進展，以儘快參與達成修正案目標。

(十三) 蒙特婁議定書締約方第 37 次會議地點

將於2025年11月3日至7日在肯亞奈洛比召開蒙特婁議定書締約方第37次會議。

二、周邊會議

(一) 澳大利亞之冷媒生命週期管理方法

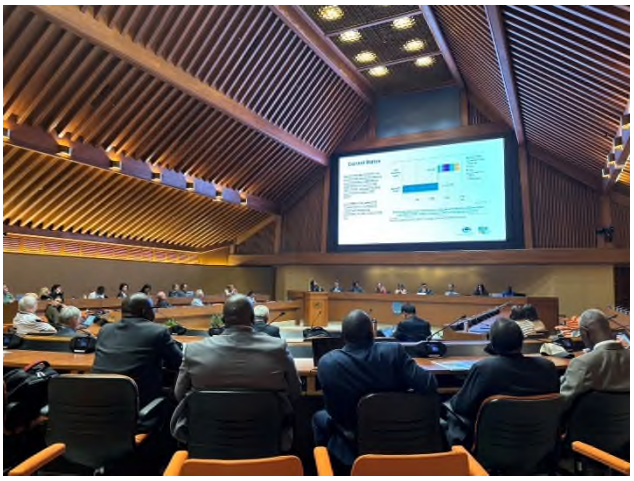
澳大利亞於 2004 年通過共同監管方式，開始實施冷媒生命週期管理，其中包括控管冷媒銷售、禁止使用一次性鋼瓶、要求使用冷媒的公司與技術人員應申請相關許可，以及強制規範冷媒應予回收。該周邊會議中，彙集了參與此一政策相關的政府機關、民間單位和業者，向與會代表說明澳大利亞冷媒生命週期管理執行方法，並說明面臨的困難與挑戰，以及後續進一步的改進措施。

(二) 提高能源效率：創新的冷媒永續解決方案

國際製冷研究所 (IIR) 提出了 Cool Up 計畫，倡議各締約方可共同支持並加入該計畫，並於周邊會議活動中，辦理了一場專注於提高能源效率和推進可持續解決方案的會議。會議中介紹了創新的節能冷卻技術，分享最佳實踐的方式，並強調能源效率和技術進步，能直接達到在降低溫室氣體排放方面的關鍵作用。並介紹了計畫中包含規劃支援節能冷卻的融資機制，以供締約方能達具體提高能源效率的機會。

(三) 連結利益相關者並創建生命週期冷媒管理 （LRM）之循環系統

日本環境省（MOEJ）、氣候與清潔空氣聯盟（CCAC）及日本海外環境合作中心（OECC）等單位，分享日本如何協助亞洲發展中國家建構冷媒生命周期管理及相關技術經驗，例如用於回收、再利用和銷毀廢棄冷媒，及鋼瓶的管理。日本以符合所定之法規管制方式，並搭提高行動透明度的追蹤系統（包含測量、報告和驗證：MRV）作法，達成整體之冷媒生命周期管理制度。



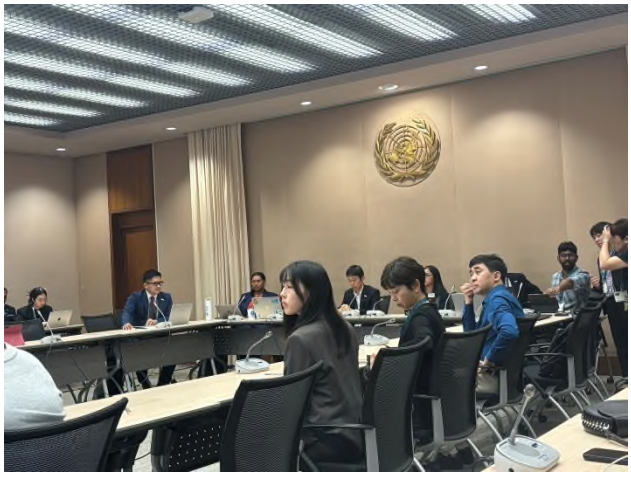


圖2，參加周邊會議辦理情形

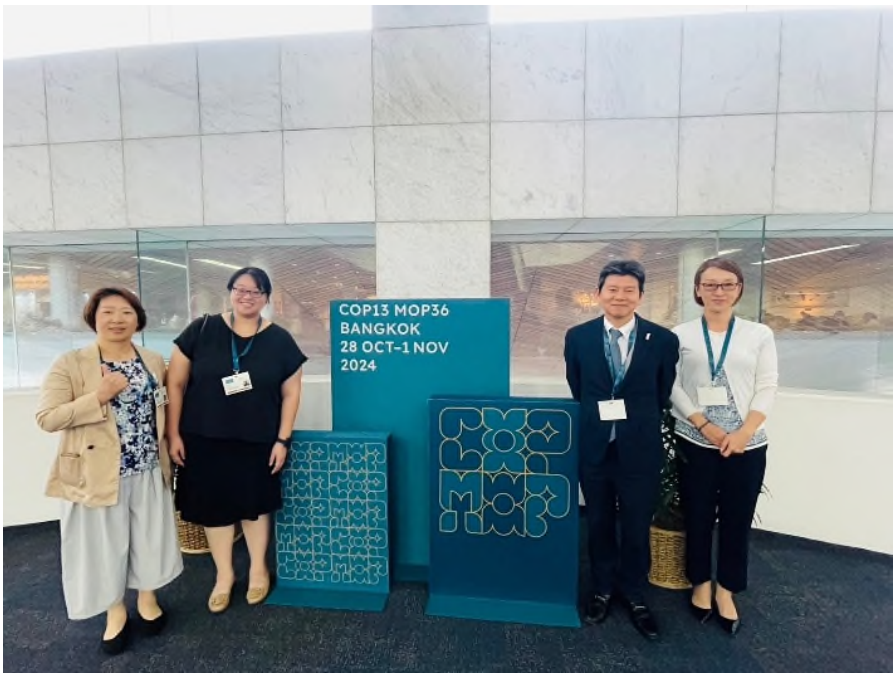
肆、重要議題國際交流情形

本次 MOP 36 會議期間，我團特別針對吉佳利修正案所管制之 HFC 使用於半導體製程之消費量認定、再生冷媒管理以及冷媒銷毀技術等議題，分別與日本、韓國、泰國及美國等各締約方代表，以及 TEAP 專家進行資訊交流。各議題交流內容與成果如下：

一、 半導體製程使用 HFCs 之消費量認定

我國半導體產業分別向日本、美國與中國進口 HFCs 以作為蝕刻製程之用，其中，近 6 成來自日本。惟製程中使用的 HFCs 是否可認定為原物用途而免納入消費量計算一事，經本次會議與 TEAP 委員江里口 武（Mr. Takeshi Eriguchi，日本籍）交流，其表示目前 TEAP 報告中所指半導體製程之 HFC-23 排放源，包括 HFC-23 於製程使用過程中的排放量，以及其他 PFCs 之副產物 HFC-23 排放量。而因蒙特婁議定書並未將原料用途（feedstock）納入國家消費量計算，惟原料用途之定義未臻明確，經江里口 武諮詢日本經產省實務作法，日本目前所申報為原料用途之數據，僅將反應與遭破壞的數量（假設約86%）納入原料用途的數量申報，而鋼瓶殘留量與最終排放量（假設約10%）則仍納入該國消費量申報。

另因本次會議有關 HFC-23 的議題，主要專注於排放量的推估，TEAP 專家表示，雖然報告中也有提到部分國家將半導體製程使用歸於原料用途，部分國家沒有，但會議過程中，並未有任何締約方針對此項提出質疑或疑問，因此也還不會有後續的決議文件，目前由各締約方自行決定是否將半導體製程使用歸於原料用途，尚無各國共通之作法，需再視下一次 TEAP 報告進展及締約方會議是否會有締約方提出討論。



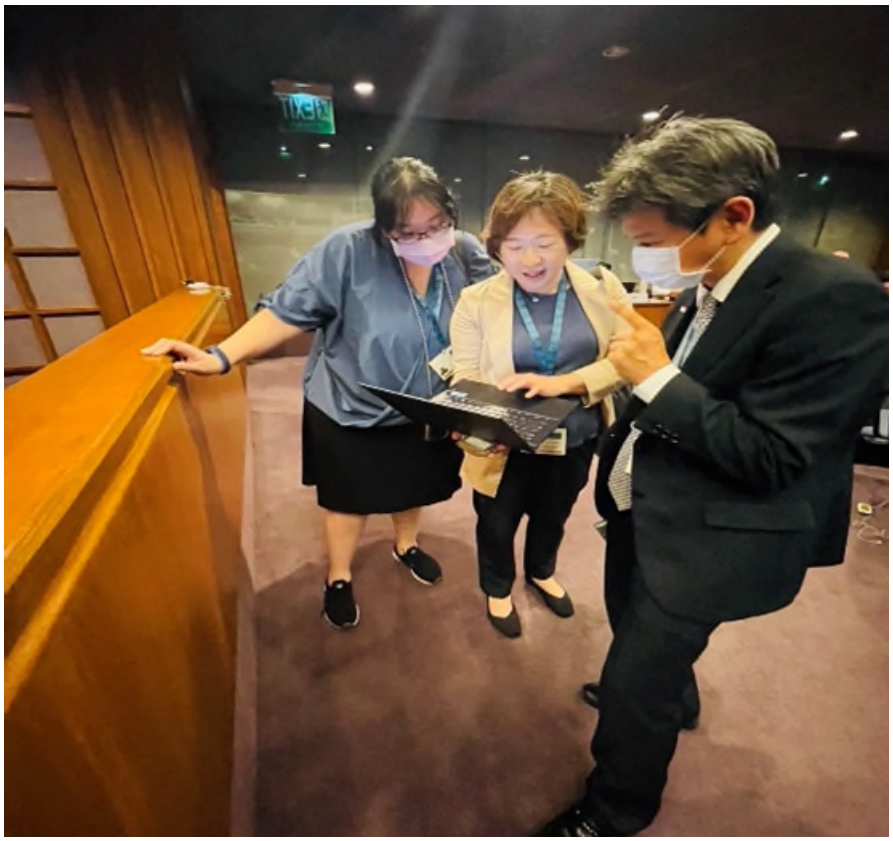


圖3、與TEAP委員江里口 武（Mr. Takeshi Eriguchi，日本籍，右一），討論半導體製程使用HFCs 之消費量認定

另本團考慮各締約方之產業特性，亦就本議題諮詢韓國代表，今年韓國政府機關未派員出席會議，但委託協助其研擬因應蒙特婁議定書與化武公約策略的單位：韓國石化公會（KPIA, Korea Petrochemical Industry Association）Ms. Mun Yeong Choi出席。該員表示，韓國目前亦規劃將半導體製程使用之 HFCs 列為原料用途，且計算其消費量基準量時，規劃不另納入生產或進口作為原料用途之 HFCs 數量。

本次會議中亦向美國環保署代表 Ms. Cindy Newberg 洽詢半導體製程之 HFC-23 排放應如何申報，其表示本次會議提案表格修訂是針對生產HFCs 等列管物質應申報其排放數據，因本國未有生產 HCFCs 或 HFCs 情形，作為半導體製程使用非屬此項，毋須申報此數據。

二、 冷媒回收之管理

日本已投入冷媒回收、再利用、再精製等相關作業，近年並持續拓展與東南亞國家合作，協助其建立冷媒回收與再利用程序。日本海外環境合作中心 (Overseas Environmental Cooperation Center, OECC) 於本屆會場展示小型冷媒回收設備與冷媒偵測器。此外，日本環境省、日本冷凍空調公會（JRAIA）、Climate and Clean Air Coalition (CCAC)、Initiative on Fluorocarbons Life Cycle Management (IFL)、OECC 等單位共同舉辦周邊會議，說明日本推動冷媒回收再利用流程。本團與 JRAIA 的 Mr. Koji Hatano、OECC 的 Mr. Makoto Kato 交流，表示日本係產業界及官方共同合作，以S＋3E的原則（安全、環境效益、能效、經濟可行）推動HFCs冷媒替代與回收再利用，202 2年已產生約 1200 公噸再精製冷媒（兩年內從 20% 提升至 35% ），惟其去化之管道尚未充分提升。

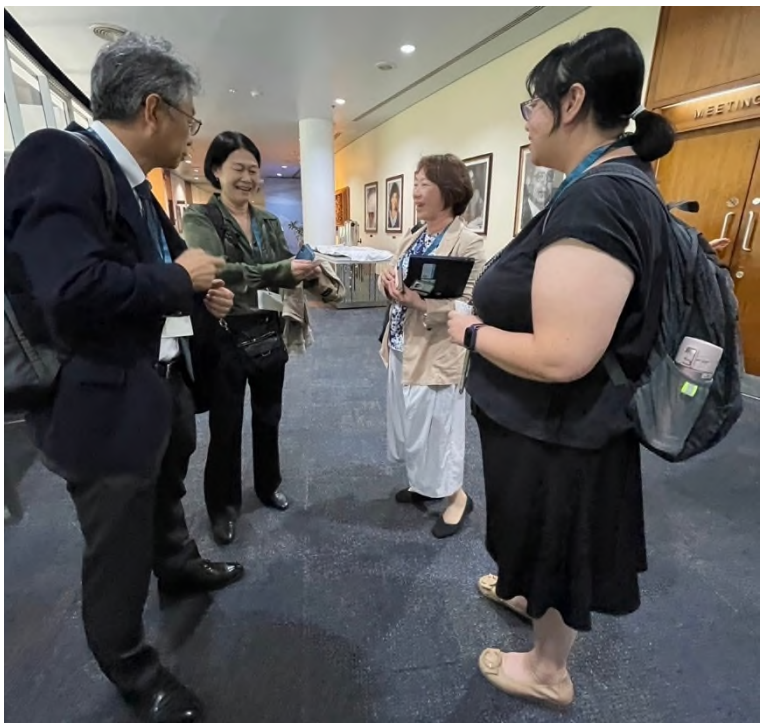


圖4、與JRAIA的Mr. Koji Hatano（左一），討論日本推動冷媒回收再利用流程

三、 冷媒銷毀實績交流

本團與協助泰國政府執行處理緝獲走私ODS銷毀計畫並取得自願減量碳額度之民間企業 Tradewater 的 Ms. Maria Gutierrez 與 Ms. Becky Romanovsky，以及泰國廢棄物管理公司 (WMS, Waste Management Siam Ltd.) 的 Mr. Prin Hanthanon 討論冷媒銷毀實務。其分享泰國目前處置冷媒的費用是一公斤約 60 元，且為執行自願減量專案計畫，需投入更多資金以進行第三方確查證工作，不符執行成本。

四、 其他蒙特婁議定書關注之相關議題

與前 TEAP 主席 Dr. Stephen O. Andersen（亦為前美國環保署官員）和我方交流蒙特婁議定書相關議題，其提出建議未來應關注兩點：

(一) 生產 HCFC-22 會產生副產物 HFC-23，若未來 HCFC-22

之市場需求減少，生產國家或僅進口的國家，HFC-23 消費量將持續增加，且生產國會銷毀 HCFC-22 而增加耗能，又會因減少銷毀高 GWP 值之 HFC-23 而可能增加供應過程之排放量，值得各國未來深入研究。

(二) 注意到家用空調設備安裝時太接近牆壁，造成熱氣排放不佳，影響設備的能效表現。因此，建議各國應研議設備離牆之適當距離。

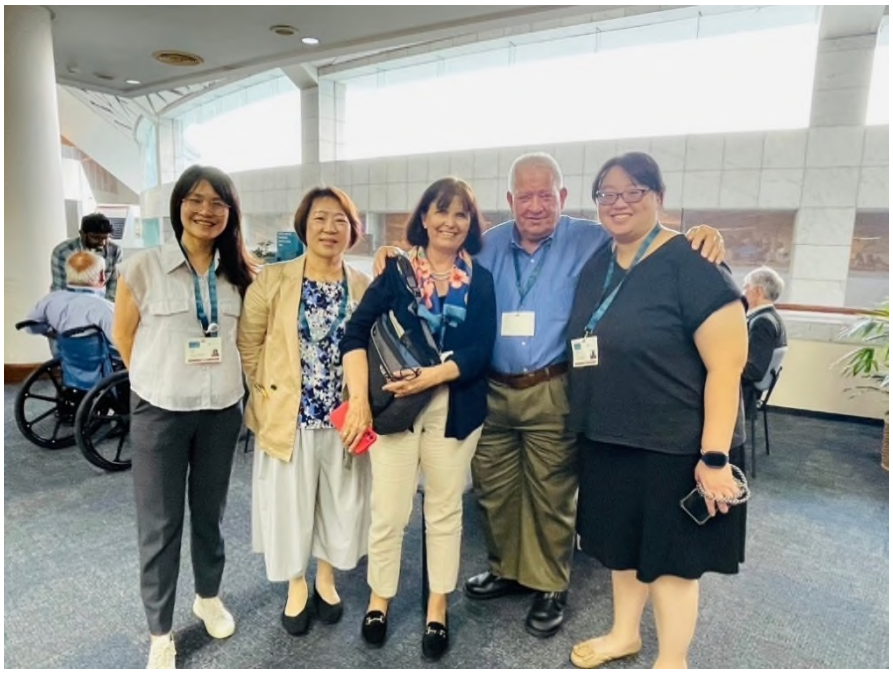


圖5、與前TEAP主席Dr. Stephen O. Andersen（右二）及TEAP共同主席Ms.Marta Pizano（中間）合影，討論蒙特婁議定書關注議題

表3、與國際專家交流紀錄

單位	與談人	討論內容
TEAP委員	Mr. Takeshi Eriguchi	半導體製程使用HFCs之消費量認定
韓國石化工會	Ms. Mun Yeong Choi	半導體製程使用

		HFCs 之消費量認定
美國代表	Ms. Cindy Newberg	半導體製程使用HFCs之申報方式
日本冷凍空調公會（JRAIA）	Mr. Koji Hatano	冷媒回收之管理
日本海外環境合作中心(Overseas Environmental Cooperation Center，OECC)	Mr. Makoto Kato	冷媒回收之管理
泰國民間企業Tradewater	Ms. Maria Gutierrez、Ms.Becky Romanovsky	冷媒銷毀實績交流
泰國廢棄物管理公司(WMS,Waste Management Siam Ltd.)	Mr. Prin Hanthanon	冷媒銷毀實績交流
TEAP前共同主席	Dr.Stephen O. Andersen	其他蒙特婁議定書關注之相關議題
TEAP共同主席	Ms. Marta Pizano	其他蒙特婁議定書關注之相關議題

伍、心得及建議

1. 本次為首次參與國際公約會議，進入大會議題討論時，大致上可區分為以美國為主的已開發國家一派，及以中國為主的開發中國家一派，分別代表進行各項議題的討論，其中，各議題又時常以已開發國家之資金來源，或是責任歸屬的問題而陷入癥

結，進而展開了後續漫長的聯絡小組會議討論。

2. 我國雖非蒙特婁議定書締約方，但歷來均遵循議定書之規範並提交相關數據，亦被視為締約方而得以締約國進行相關貿易往來，目前亦依公眾意見研處，辦理 HFCs 管理辦法草案之法制作業事宜，預估應可符合聯合國臭氧秘書處之規劃，於 2025 年 3 月 31 日前完成法規發布及配套措施建置。

3. 本次大會各方極為關注 TEAP 報告指出 HFC-23 的大氣觀測濃度顯著高於締約方申報數據情形，大會並決議加強全球對受控物質的大氣監測，特別是在未充分監測的地區，通過設置新監測站點和推動國際合作以提升監測能力。我國目前因尚未進行 HFCs 管制作業，現行亦無大氣觀測 HFCs 之機制，惟俟後續 HFCs 管理制度正式實施後，可參考溫室氣體之監測機制，研議我國之大氣觀測系統可行性，以掌握大氣中實際之排放情形。

4. 本次會議已與日本、韓國代表及 TEAP 委員確認，目前公約並未限制半導體產業製程使用之 HFCs 不得作為原料認定。又日本及韓國之相關法規及制度，均已將半導體產業製程使用之 HFCs 視為原料用途（惟各國採計方式及後續計算消費量方法仍有差異），因此，已參考日本及韓國兩國之制度，將消費量豁免計算申請由產業之主管機關協助作為原料認定的方式，擬定我國之 HFCs 管理制度，另基準量計算，考量目前公約已有之規範，以不另扣除作為原料使用之 HFCs ，符合公約一致性原則。

5. 本次大會中討論提到多項物質，均非屬於蒙特數議定書已列管物質，包含部分 HFCs 之同分異構物、極短壽命物質 (very short-lived substances, VSLS) 等，惟後續是否列入公約管理尚無定論，此項議題建議我國需持續蒐集相關訊息，並掌握國際最近動態以預為因應。

6. 蒙特婁議定書之管制架構為源頭削減（限制各國之生產量與進

出口量），但其最終目的為降低列管化學物質排放到大氣層中之濃度與數量，為避免因未能有效回收再利用而直接排放到大氣中，且降低列管化學物質供應不足之風險，日本與歐美等先進國家皆相當重視冷媒之回收再利用。惟本次與日本代表交流時，其亦表達雖已有相關冷媒回收、再利用、再精製之技術與流程，惟其去化亦尚未能顯著提升，與我國面對之瓶頸類似。

7. 另協助泰國政府執行處理緝獲走私 ODS 銷毀計畫之民間企業，目前已取得自願減量額度，後續如我國相關冷媒管制措施實施後，亦可能有部分業者為取得自願減量額度，而投入銷毀或回收之市場。建議可持續蒐集國際冷媒回收與再利用機制，並適時邀集國內冷凍空調廠商及公會共同商議，期能建立適合國內發展的冷媒回收再利用流程與作法。

8. 本次會議中，我團亦藉由工研院歷來參與締約方會議所累積的國際交流經驗，對於 HFCs 使用於半導體製程、冷媒的回收與銷毀等相關議題，分別與 TEAP 專家、韓國產業代表、美國、日本與泰國等各締約方代表討論並進行資訊交流，相關的國際交流情形除了作為我國後續研訂 HFCs 管制措施及冷媒管理等策略的重要參考來源外，亦各自保存了相關聯絡訊息，以建立未來諮詢或合作的聯繫管道。

9. 最後，身為一個有家中有 10 個月大男嬰及 3 歲女孩的職業媽媽，距離上一次因公出席國際會議竟已有 7 年之久，本次因應氣候變遷署後續承接了我國國內氫氟碳化物的管理業務，得以新增國際會議機會，出國前亦經主管提醒，作為機關代表，除了一個初次踏入相關國際性會議，亦是一場「學習之旅」。能順利完成本次國際會議行程，對於恪守工作崗位的各位主管、同仁，以及為這次國際會議盡力安排相關行程及會前提醒的外交部團隊、陪同出團的工研院同仁，還有為了讓我能獨自出國與會，所動員的各路親朋好友後援團，無盡感謝。

陸、附錄

附錄一、會議議程

附錄二、MOP 36會議紀錄報告

附錄三、MOP 36會議決議文件

摘要

今（2024）年於 10 月 28 至 11 月 01 日假泰國曼谷聯合國會議中心（United Nations Conference Center）召開保護臭氧層維也納公約第 13 次締約方會議(以下簡稱 COP 13,約每三年召開一次）暨蒙特婁議定書第 36 次締約方會議（簡稱 MOP 36，每年召開一次），本次會議計有超過 200 多個國家及民間單位參與。

本次會議辦理直至 2024 年 11 月 01 日星期五晚上 9 點 45 分宣布結束，其中，維也納公約部分共產出 4 個決議，蒙特婁公約共計產出 23 個決議內容，各項決議中值得我國持續關注之決議及其後續發展包括：

1. 鑑於蒙特婁議定書吉佳利修正案通過將屆滿 10 周年，目前批准吉佳利修正案的 160 個締約方,已有 154 個締約方建立氫氟碳化物 (HFCs) 之管理與許可制度，但仍有安哥拉、巴林王國、吉布地共和國、肯亞、聖馬利諾共和國及阿拉伯聯合大公國等 6 個締約方未依吉佳利修正案規定建立相關制度；聯合國環境規劃署臭氧秘書處敦促前述尚未有許可制度之締約方,最遲應於 2025 年 3 月 31 日提報建立HFCs許可制度相關進展。

2. 蒙特婁議定書之技術與經濟評估委員會 (Technology and Economic Assessment Panel, TEAP) 於會議中進行全球 HFC-23 排放評估報告,說明大氣觀測到之 HFC-23 濃度遠高於締約方所申報之消費量數據，TEAP 認為大部分的 HFC-23 排放仍有不明的其他來源。會議決議邀請締約方及科學機構進行 HFCs 的大氣監測和源頭研究。此外，並同時要求 TEAP 提供 HFC-23 作為副產品之排放監測、估算、報告和銷毀的最佳實踐指引資訊。

3. 另決議請具生產 HCFCs 或 HFCs 設施的締約方，自發性在 2025 年 3 月 31 日前於排放申報表格 6 填寫各項設施產生的 HFC-23 排放量及估算方法。

4. 臭氧秘書處邀請已限制含列管化學物質及低效能源產品設備進口的締約方，自願提供針對含列管化學物質的產品和設備的國家政策、標準或法規資料，並提供規範中所涉及的產

品或設備類別，後續將於秘書處網站上公布所蒐集的資訊清單。

5. 為加強議定書的執行，對於管制物質非法貿易遏止，將由彙整各締約方許可制度的匯編開始著手，並就締約方實際執行打擊非法走私情形，提交至不限成員名額工作小組 (Open-ended Working Group，OEWG) 第 47 次工作會議審議。

另本次會議我團特別針對吉佳利修正案所管制之 HFCs 使用於半導體製程之消費量認定、冷媒的回收管理以及冷媒銷毀及其他蒙特婁議定書關注之相關議題等議題，分別與 TEAP 專家、韓國產業代表、美國、日本與泰國等各締約方代表以及進行資訊交流，可作為我國後續研訂 HFCs 管制措施、冷媒回收管理等策略與精進冷媒銷毀技術之重要參考依據，並就溫室氣體減量推動實務之交流，建立未來合作聯繫管道。

目錄

壹、前言

「蒙特婁議定書」是聯合國為了避免工業產品中的氟氯碳化物對地球臭氧層繼續造成惡化及損害，承續 1985 年保護臭氧層維也納公約的大原則，於 1987 年 9 月 16 日邀請所屬 26 個會員國在加拿大蒙特婁所簽署的環境保護議定書，以管制臭氧層破壞物質(Ozone Depleting Substances，ODSs)。

該議定書自 1989 年 1 月 1 日起生效後，聯合國環境規劃署(United Nations Environment Programme，UNEP) 臭氧秘書處隨即每年召開 1 次締約方會議 (Meeting of the Parties，MOP)，檢討議定書執行的現況、並協商其他 ODSs 的管制方案及討論衍生的管制議題。如有增加新的管制方案與物質，締約方會議會產出修正案(Amendments)；若無新增管制項目，僅是加嚴現有管制方案，締約方會議則會產出調整案 (Adjustments)，截至目前為止，蒙特婁議定書共計產出 5 個修正案與 14 個調整案。

其中，最新之「吉佳利修正案」 (Kigali Agreement) 係基於蒙特婁議定書自 1996 年開始管制氟氯碳化物 (CFCs) 與氟氯烴(Hydrochlorofluorocarbons，HCFCs) 後，主要推動的冷媒替代品為氫氟碳化物 (HFCs)，其中包括 HFC-134a、HFC-410A、HFC-404A 等各類純物質及其混合物。這些替代品雖無臭氧層破壞潛勢 (Ozone Depletion Potential，ODP)，但卻屬於高溫暖化潛勢 (Global Warming Potential，GWP) 物質，排放到大氣之後會加劇全球暖化與氣候變遷問題，亦為我國氣候變遷法所明定之溫室氣體之一；因此，於 2016 年第 28 次締約方會議 (MOP 28) 上，通過「吉佳利修正案」，將HFCs納為公約管制物質並訂定各締約方應遵守的削減時程，其管制削減的方式，依循 CFCs 與 HCFCs 削減模式，從源頭（生產與進口）逐步削減 HFCs 的消費量與生產量。

我國雖非聯合國會員國而無法成為蒙特婁議定書締約方，但為避免國內產業受到貿易阻礙，已依循蒙特婁議定書相關規定，陸續發布「蒙特婁議定書列管化學物質管理辦法」、「氟氯烴消費量管理辦法」以及「溴化甲烷管理辦法」，以管制我國 CFCs、海龍、HCFCs

以及溴化甲烷等破壞臭氧層物質之進出口與製造等行為，目前亦加速辦理氟氯碳化物相關法規草案之法制作業。此外我國亦自 1990 年起，每年以財團法人工業技術研究院之非政府組織 (Non-governmental organization，NGOs) 身分，派員出席蒙特婁議定書締約方會議，以掌握蒙特婁議定書最新管制趨勢，及參與周邊相關會議，據以滾動檢討我國相關法令與管制作為，並運用此一場合與相關國家及民間機構進行交流，進一步向國際間展現我國遵循國際公約之管制作為與成效。

本次所參加的蒙特婁議定書第 36 次締約國會議 (MOP 36) 除討論眾多議案外，面對吉佳利修正案生效將屆滿 10 年，更提出了多項關於改進申報數據、加強區域監測及回收管理的倡議，同時亦展望未來，強調如何協調各方以解決溫室氣體排放及提高能效之挑戰的溝通與討論。本署亦透過本次會議，初步學習國際公約會議的運作模式，並就溫室氣體減量推動實務，與相關國家代表團或技術專家等進行交流，建立未來合作聯繫管道，持續掌握國際間最新HFCs削減技術及最新管制趨勢。

貳、與會人員及行程

一、與會人員

本次由環境部氣候變遷署盧佩君科長代表參加，另駐泰國台北經濟文化辦事處政務組鄭舜丞副組長協助國外事務及報到，以及財團法人工業技術研究院楊斐喬經理及徐麗瀅工程師偕同與會參加，成員任務分工如表 1。

表 1、成員任務分工表

單位	職稱	姓名	任務分工
環境部氣候變遷署	科長	盧佩君	吉佳利修正案各國推動及管

			制現況資訊蒐集，對外交流及行政事務
外交部	駐泰國台北經濟文化辦事處政務組副組長	鄭舜丞	國外事務及報到
財團法人工業技術研究院	經理	楊斐喬	協助掌握會議執行進展、協助與國際友人聯絡交流、蒐集國際替代產品或技術進展
	工程師	徐麗瀅	

二、行程規劃

本次會議期間自 113 年 10 月 28 日至 113 年 11 月 1 日，共計 5 天，會議地點為泰國曼谷聯合國會議中心（United Nations Conference Center），會議行程如表 2所述。

表 2 會議行程表

日期	行程
10 月 27 日(日)	搭機前往泰國曼谷，預為準備會議資料
10 月 28 日(一)	**預備會議** (一) 完成會場報到 (二) 聯合國環境規劃署 (UNEP) 代表致歡迎詞，預備會議開幕 (三) 會議架構：確認預備會議討論議題項目、會議工作程序與架構 (四) 维也納公约信託基金和蒙特婁議定書信託基金預算與財務報告 (五) 蒙特婁議定書議題 1. 審議蒙特婁議定書下設各機構 2025 年成員 (1)不遵守蒙特婁議定書程序下設履行委員會成員 (2)執行蒙特婁議定書多邊基金執行委員會*

日期	行程
	(3)工作組共同主席 2.HFC-23 排放問題 (1)由科學評估委員會 (Scientific Assessment Panel，SAP) 及技術暨經濟評估委員 (Technology and Economic Assessment Panel，TEAP) 進行排放評估報告（第 XXXV/7 號決定第 1 和第 2 段） (2) HFC-23 申報表格 3.冷媒生命周期管理，包括冷媒生命周期管理工作坊成果（第 XXXV/11 號決定） 4.壽命極短物質討論 5.列管物質作為原料用途 6.強化蒙特婁議定書列管物質之全球與區域性監測 7.海龍替代品與其可取得性 8.技術暨經濟評估委員會 (TEAP) 審查 A5 國家遵約情形 9.能源效率議題 (1) 不進口低能源效率產品 (2) 強化設備能源效率 10. 蒙特婁議定書之豁免議題：溴化甲烷 2025 申請情形 11. 技術暨經濟評估委員會 (TEAP) 成員異動 12. 蒙特婁議定書吉佳利修正案批准情形
10 月 29 日(二)	**預備會議** (一) 接觸小組會議情形報告 1.列管物質作為原料用途 2.壽命極短物質 3.海龍替代品與其可取得性 4.強化蒙特婁議定書列管物質之全球與區域性監測 (二) 蒙特婁議定書議題討論 1.各締約方遵約與提交數據情形 2.將巴勒斯坦納入蒙特婁議定書第 5 條第 1 款之締約方，並獲得多邊基金支持 (三) HFC-23 排放問題 (四) 維也納公約議題 1.維也納公約締約方臭氧研究管理人員第 12 次會議報告 2.信託基金提供维也纳公约所涉研究和系统性觀測活動報

日期	行程
	告 (五) 其他事項與提案 1. HFCs 同分異構物 2. 展延第 5 條之締約方履行期限 3. 噴霧罐推進劑之低 GWP 替代品 4. HFC-23 申報表格 5. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構
10 月 30 日(三)	**預備會議** (一) 前日接觸小組討論之情形於大會報告 1. 展延第 5 條之締約方履行期限 2. HFC-23 申報表格 3. 冷媒生命周期管理 4. HFC-23 排放問題 5. 噴霧罐推進劑之低 GWP 替代品 6. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構 (二) 接觸小組會議討論議題 1. 能源效率議題 (1) 不進口低能源效率產品 (2) 強化設備能源效率 2. 壽命極短物質 3. 強化蒙特婁議定書列管物質之全球與區域性監測 4. 列管物質作為原料用途 5. 展延第 5 條之締約方履行期限 6. 噴霧罐推進劑之低 GWP 替代品 7. HFC-23 排放問題 8. HFC-23 申報表格 9. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構 10. 冷媒生命周期管理 11. 海龍之回收、再生及再利用
10 月 31 日(四)	**高階會議** (一) 開幕典禮：COP 12 主席、UNEP 副執行主任、泰國工業部部長代表致詞 (二) 會議架構：MOP 36 主席選舉、確認高階會議議程、會議工作

日期	行程
	(三) 程序與架構、各單位代表之到任文件（Credentials of representatives） (四) 各評估小組綜合報告 (五) 多邊基金執行委員會主席報告基金執行內容與進展 (六) 各國代表致詞 (七) 工作小組討論 1. 壽命極短物質 2. 強化蒙特婁議定書列管物質之全球與區域性監測 3. HFC-23 排放
11 月 1 日(五)	**高階會議** 1. MOP 36 預備會議決議結果說明 2. MOP 37 會議地點與時間 3. 其他事項 4. MOP 36 會議決議 5. MOP 36 會議決議確認通過 **由泰國曼谷搭機返國**

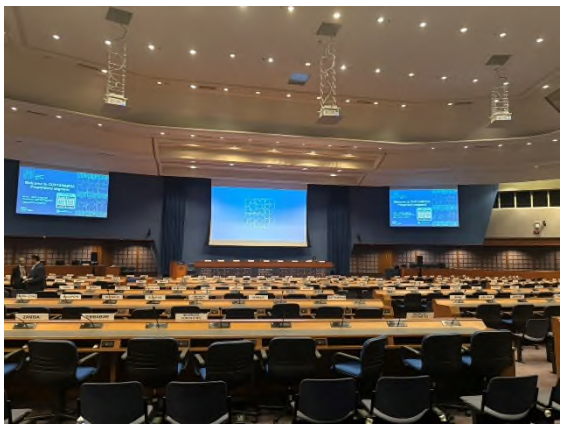


圖1、會議地點：泰國曼谷聯合國會議中心（United Nations Conference Center）

參、會議討論內容及決議

本次 MOP 36 我團以財團法人工業技術研究院之 NGOs 身分參加，於 2024 年 10 月 28 日順利完成報到並取得入場證，會議過程中除了參與 MOP 36 之主會場大會外，亦參加了周邊會議及有興趣之聯絡小組議題會議，以下重點摘要我國應持續關注之決議、議題及其後續發展如下:

一、MOP 36 會議討論內容及決議

本次會議維也納公約部分共產出 4 個決議，蒙特婁公約共計產出 23 個決議內容，我國應持續關注及追蹤後續發展之決議內容如下:

(一) HFC-23排放管理及修訂HFC-23數據報告格式

1. HFC-23排放管理：

第 XXXV/7 號決議已要求 SAP 及 TEAP 在大會提交 HFC-23 排放情形報告，本次會議中，SAP 及 TEAP 即依上開決議事項進行報告。依 SAP 說明，其研究報告顯示自 2014 年後，締約方所蒐集全球 HFC-23 排放量申報數據，與根據觀測得到的大氣中 HFC-23 排放估計值之間存在顯著差距，其中約有75-89%的排放量並未含括在申報數據資料中。此外，依據研究結果，推估中國在其申報數據以外的 HFC-23 排放量，便已佔了全球排放缺口至少 20-50%。

TEAP 報告中則說明 2022 年之全球消費量為 3684.3 公噸，而作為原料用途之數量為 1,070 公噸。假設排放係數為 2.1%，估算排放量約為 22 公噸。但大氣觀測到之 HFC-23 濃度遠高於締約方所申報之消費量數據，依觀測濃度推估，2022 年約排放達 14,000 公噸。因此，TEAP 目前認為大部分的 HFC-23 排放係基於不明的其他來源（現行已知 HFC-23 的用途別，則包括超低溫冷凍冷藏冷媒、滅火藥劑及半導體製程蝕刻清洗等）。考量 HFC-23 來源除原有認知的 HCFC 副產物以外，可能係由大氣中衍生或其他來源產出，目前因為沒有明確的研究資料，無法解釋這些差異性，但 TEAP 提出建議可修正申報表格 6 號來協助處理此一議題。在全體會議中進

行了長時間的問答環節後，美國和中國分別宣佈將與其他締約方合作提交會議文件 (conference room paper，CRP)。

美國與加拿大共同發起了 UNEP/OzL.Pro.36/CRP.7提案，該提案指出，根據會議中 SAP 及 TEAP 報告訊息，可得出的中國東部排放量估計值遠高於預期,要求相關方採取必要行動以履行 HFC-23 排放管理的義務，且需調查其申報排放量與大氣監測得出的排放量估計值之間存在偏差的潛在原因。

中國則提出了 UNEP/OzL.Pro.36/CRP.8文件，呼籲應加強對全球 HFC-23 排放和數據報告的研究；並邀請擁有 HCFC-22 生產設施的締約方自願報告其目前核算結果和申報 HFC-23 排放（包括逸散性排放）的方法；以及要求臭氧秘書處成立一個專家工作小組，研究和制定相關技術準則，供締約方申報 HFC-23 排放情形。

2 份 CRP 文件於會議中歷經了長時間的爭論，中國認為美國與加拿大的提案將一個全球問題定位為某一個締約國問題，對相關方是“不科學”、“不切實際”和“不尊重”的行為。美方則澄清 CRP.7 中概述的任何要求都並非強制性，後續美國亦承認 HFC-23 排放是一個全球性問題,但表示仍必須考慮有關特定區域排放的科學數據。

前開爭議後續決定成立聯絡小組進行 CRP.7 和 CRP.8 的討論,該聯絡小組由 Shontelle Wellington（巴巴多斯）和 Paul Krajnik（奧地利）共同主持，經過了 6 次小組會議的討論，最終於週五下午 6 點半，達成一致共識，將草案提交全體會議。

大會最終決定事項如下：

(1) 議定書締約方會議邀請相關方展開並鼓勵與科學研究機構合作進行 HFC-23 大氣監測和 HFC-23 排放源的研究,並分享相關結果。

(2) 請擁有 HCFC-22 生產設施的締約方在 2025 年 3 月 31 日之前自願向臭氧秘書處提交其目前估算的數據 並報告國內進行 HCFC-22 生產時，HFC-23 排放情形。

(3) 邀請已採用最佳技術減少 HFC-23 排放的締約方在 2025 年 3 月 31 日之前自願向臭氧秘書處提供此類資訊。

(4) 要求 SAP 更新關於 HFC-23 的第 XXXV/7 號決議報告

內容，以反映更多的即時新資訊，並就此事項於議定書締約方會議第 37 屆會議提交報告;另要求 TEAP 提供有關測量、估計、報告和驗證 HFC-23 副產品排放及其銷毀的最佳實踐和指引資料。

2. HFC-23 的數據申報表單修正：

在不限成員名額工作小組(Open-ended Working Group，OEWG)第 46 屆會議上，秘書處已提出了更改數據申報表 3（涉及生產數據）的建議，一些締約方也建議可更改數據申報表 4 （涉及銷毀）和數據申報表 6 （涉及 HFC-23 排放）。美國於本次會議上，提出會議文件提案包含修訂後的數據申報表，旨在使各不同的管制物質申報方式一致，後續成立了聯絡小組進行本提案討論。

聯絡小組共召開 4 次會議，討論內容包含提案方要求 TEAP 應提供的資訊;申報表格的架構；如何以申報表格反應製造、輸入或輸出，及銷毀並導出相關數據及資料。

最終議定書締約方會議批准了經修訂的數據申報表格 3 和申報表格 6，以及申報數據表格的填寫說明。

(二) 促進冷媒生命周期 (life-cycle refrigerant management，LRM)管理及相關工作坊成果

第一日會議中（週一），OEWG 聯合主席 Brieskorn 介紹了在大會前一日（10 月 27 日）所舉辦的促進冷媒生命周期管理工作坊成果，在工作坊會議中，一些締約方呼籲希望為第 5 條發展中國家提供財政支援，以培訓冷媒回收管理的技術人員，並購置回收和再利用的裝備，以及呼籲提供有關清除處理含有冷媒設備的資訊。

密克羅尼西亞聯邦 (FSM) 就該議題提出了一項決定草案，呼籲 TEAP 提供更多關於 LRM 的資訊，並請臭氧秘書處彙編線上 LRM 資料庫、強化締約方的 LRM 管理政策。OEWG 聯合主席 Brieskorn 建議就上述議題成立聯絡小組，由 Morgan Simpson （英國）和 Osvaldo Alvarez Perez （智利）共同擔任聯絡小組主持人。

該小組後續舉行了 4 場會議，最終在關於 LRM 的決定中，議定書決議要求 TEAP 在 2025 年及其後續進展報告（包括預計於 2026 年發布的 4 年期評估報告）中，納入有關各締約方或區域對

於 LRM 的最新相關信息，同時請執行委員會和秘書處繼續研議強化 LRM 的方法;要求秘書處彙編關於 LRM 的資訊並將其公布在網站上;鼓勵第 5 條締約方在制訂和實施基礎設施管理時，將 LRM 納入，進行整體考量。

(三) 針對極短壽命物質 very short-lived substances (VSLS) 的應對措施

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了極短壽命物質 very short-lived substances (VSLS) 議題，於 2024 年 TEAP 評估報告指出，極短壽命物質 very short-lived substances (VSLS) 涵蓋二氯甲烷、三氯甲烷、1,2-二氯乙烷、三氯乙烯及全氯乙烯等，這些物質非蒙特婁議定書管制物質，其臭氧層破壞潛勢 (Ozone Depletion Potential，ODP) 值極低但不為零，且在大氣的壽命不到 6 個月;儘管 VSLS 對平流層總氯濃度的貢獻度相對較小，但其貢獻度持續增加，2020 年約占平流層總氯濃度之 4%。後續於 Heidi Stockhaus （德國）和 Juan Jose Galeano （阿根廷）共同主持的聯絡小組中繼續審議此議題。

聯絡小組舉行了 3 場次會議討論關於 VSLS 的決定草案（UNEP/OzL.Pro.36/CRP.12）內容，與會代表一致認為需要更新有關二氯甲烷、三氯甲烷、二氯乙烷、三氯乙烯和全氯乙烯等五種 VSLS 在過去五年的增長趨勢與相關資料。另該聯絡小組討論了是否要求 TEAP 提供有關已確定的五種 VSLS 的臭氧消耗潛勢 （ODP） 和影響臭氧層的最新資訊。

締約方會議在 VSLS 的最終決定上，要求 TEAP 和 SAP 在 2026 年評估報告中納入有關討論 VSLS 資料並於 OEWG 第 49 次會議審議，其報告內容應包含：五種 VSLS 最新資訊，包括作為溶劑和原料用途，以及 VSLS 過去五年的增長趨勢、ODP 以及對平流層臭氧層的影響等；有關 VSLS 替代品的其他資訊；估計 VSLS 的年產量和消費量及年排放量；另請 SAP 評估 VSLS 的 ODP 及對平流層總氯輸入的貢獻，以及對平流層臭氧層的可量化影響。

(四) 管制物質的原料用途管理

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了管制物質的原料用途管理議題，並說明在管制物質的生產、運輸、分銷、

儲存、處理、重新包裝和用作原料過程中，應盡量減少其排放。

後續由 Ryan Ooi Chean Weai(馬來西亞)和 Michel Gauvin（加拿大）共同主持該議題的聯絡小組會議，聯絡小組於週三舉行公開會議，並於週四和週五在僅限締約方的情況下舉行會議。小組在會中討論了如何最大限度地減少排放及最佳可行控制技術相關問題，以及是否應建立一個資金窗口以支援生產製造相關的專案議題，以採行最佳可行控制技術，最大限度地減少用作原料的管制物質排放。

最後議定書締約方在管制物質的原料用途管理的決議事項如下：

1. 要求盡量減少管制物質在生產、運輸、分銷、儲存、處理、重新包裝和用作原料過程中的排放，或使用最佳可行控制技術，或採製程變更、縮減或銷毀來減少排放
2. 鼓勵各締約方依各國國情，參考使用 TEAP 於 2024 年進度報告中已提出的確定方法和技術，減少管制物質在生產、運輸、分銷、儲存、處理、重新包裝和用作其他化學品製造原料過程中的排放
3. 鼓勵擁有相關做法和技術的締約方向秘書處提供資訊，以協助締約方促進應用;
4. 邀請生產和使用受管制物質作為原料的締約方在 2025 年 5 月 1 日之前自願向秘書處提供資訊，說明其為管理此類生產和使用而建立的管制制度，包括由此產生的排放管制措施;並請秘書處整理所提供的資訊，提供 OEWG 第 47 次會議審議。

(五) 加強全球與區域大氣監測

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了這一議題並決議成立一個聯絡小組，由 Liana Ghahramanyan（亞美尼亞）和 Alessandro Giuliano Peru（義大利）共同主持。

該小組後續於締約方會議期間舉行了多場會議，重點包含了關注如何評估適宜之潛在監測點位方式;諮詢各締約方建置監測機制的流程;研析與其他相關機構共同出資以支應監測計畫方案;以及評估監測資金來源和所需金額範圍。

最後有關加強全球與區域大氣監測議案決定事項中，議定書締

約方會議要求秘書處評估適合監測管制物質的區域排放地點，並由蒙特婁議定書信託基金的現金餘額中撥款 400,000 美元支應;要求秘書處諮詢委員會研議可能的監測地點、如何利用現有設施並與其他可執行監測相關計畫的組織保持聯繫，並協調合作後續監測事項;要求執行委員會考量資助部分點位的監測專案，以加強大氣監測並於下次 MOP 37 會議中報告。

(六) 噴霧罐吸入器（MDIs）低溫暖化潛勢（GWP）替代品

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了這一議題，提出為了推動高 GWP 噴霧罐吸入器使用替代產品之過渡時期措施（第XXXVI/[D]號決定草案），決議成立一個聯絡小組，由 Henry Wöhrnschimmel （瑞士）和 Noe Megrelishvili （喬治亞）共同主持。該小組舉行共 4 場次會議，討論了向 TEAP 提出的繼續“監測”和更新 MDIs 及其替代品發展情況的要求，並提供有關低GWP的噴霧罐吸入器的最新資訊，包括其技術可行性、經濟可行性、安全性和在發展中國家的使用情形。

最終在關於使用低 GWP 的噴霧罐吸入器決定如下：

1. 邀請生產 MDIs 的締約方在 2025 年 6 月之前自願向秘書處提交關於使用低 GWP 的噴霧罐吸入器產品開發進展和其他替代品的可得性，以及過渡期間之相關經驗;
2. 要求 TEAP 繼續提供有關低 GWP 的噴霧罐吸入器產品的最新資訊，並補充於 2026 年之四年期評估報告中，包括關於其技術可行性、經濟可行性、安全性和第 5 條締約方的使用情形資訊;
3. 鼓勵締約方根據 TEAP 2026 年之4年期評估報告中提供的更新資訊，於 2027 年前重新審視各國 MDIs 採用低 GWP 替代品情形。

(七) 海龍及其替代品

第一日會議中（週一），OEWG 聯合主席 Brieskorn 介紹了這一議題並成立了一個聯絡小組，由 Andrew Clark （美國）和 Ali Tumayhi （沙烏地阿拉伯）擔任聯合主席。聯絡小組於週一晚上、週三和週四舉行會議，會議主要共識包含了各方應避免故意銷毀回收

的海龍，除非這些海龍無法後續再利用，另外對於是否應該“要求”或改用“鼓勵”各締約方回收海龍的部分，進行了持續性的辯論。

最終在關於回收或再利用海龍此議題相關決定中，議定書締約方會議委員會敦促締約方應避免銷毀可回收或再利用的海龍，並確保仍有足夠的回收或可再利用的海龍庫存,以滿足預期的未來需求，並邀請各締約方鼓勵利益關係者採取上述行動，內容如下：

1. 確保在維護和維修設備期間，或在拆卸和處置設備之前，回收海龍以進行回收和再利用
2. 重新考慮對回收海龍進出口的限制，以促進回收海龍的越境轉移和再利用，並且需兼顧《巴塞爾公約》的要求;
3. 提高對海龍可持續管理重要性的認識，在有替代品的情況下避免使用海龍，並告知消費者需要為未來海龍供應減少的風險做好準備。
4. 請臭氧秘書處就海龍可持續管理的重要性與相關國際機構聯絡，並向締約方報告。

(八) 第 5 條第 2 組之締約方履約情形：TEAP 技術評估報告決議

OEWG 聯合主席 Brieskorn 指出，在 OEWG 第 46 屆會議上，印度、巴林、科威特、卡達和沙烏地阿拉伯共同提出了一項決定草案（涉及第XXVIII/2號決定第5段內容），請 TEAP 提供關於氫氟碳化合物替代品的資訊，以提供第 5 條第 2 組締約方在凍結氫氟碳化合物消費量時參考使用。

聯合主席 Brieskorn 提議成立一個聯絡小組，由 Cornelius Rhein （歐盟）和 Ana Maria Kleymeyer （密克羅尼西亞聯邦）共同主持。該小組在週二、週三、週四和周五舉行會議，討論了 TEAP 提供哪些額外資訊，以及決定草案的標題文字是否修正以核實反映內容；TEAP 所提報告是否應指定更低的 GWP 物質替代方案;決定草案是否強調對象僅為第 5 條第 2 組締約方；以及是否在第 2 組締約方中納入有關過度期之資訊。

最終在關於根據第 XXVIII/2 號決定第 5 段，有關 TEAP 技術評估報告決議事項,議定書締約方會議要求 TEAP 在 2026 年的

4 年期評估報告，提供第 5 條第 2 組締約方有關低 GWP 之氫氟碳化合物替代品的最新情況，以便為氫氟碳化合物消費量凍結做準備，提供之資訊應包括下列內容：

1. 可採用性及其挑戰和障礙;

2. 考量不同國家/地區的設備容量、替代製冷劑和設備標準;

3. 市場結構以及供應鏈問題;

4. 應對採用替代方案的挑戰和障礙的備選方案;和

5. 關於採用替代方案的成本資訊。

(九) 打擊非法貿易及加強議定書機構的下一步行動

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了歐盟提出之 CRP 文件，要求臭氧秘書處分享有關管制物質非法生產和非法貿易的資訊，以加強議定書的執行並面對相關的挑戰。本議案決定成立一個聯絡小組，由 Fathmath Usra （馬爾地夫）和 Jana Maščková （捷克）共同主持。

最終在關於加強打擊非法貿易的議題中，議定書締約方會議決議如下：

1. 要求臭氧秘書處更新其對於第 XXXIV/8 決定第4段（b）的回應，確定各締約方已有許可管制的機制；辦理各締約方許可制度及實際執行案例的彙編；並將此信息提供給各締約方並於 OEWG 第 47 屆工作會議審議；

2. 邀請尚未有許可制度的締約方向秘書處提供其所規劃許可制度的資訊;

3. 要求秘書處在 OEWG 第 47 屆會議之前，提供締約方相關彙整資料，包含防止管制物質非法貿易的最佳做法，供議定書第 37 次締約方會議前舉辦一日非正式會議，討論如何落實蒙特婁議定書的執行。

(十) 防止進口依賴管制物質或低效能源產品設備

第一日會議中（週一），OEWG 聯合主席 Mohamed 決議成立一個聯絡小組，以繼續審議吉爾吉斯斯坦在 OEWG 第 46 屆會議上提出的決定草案，該草案邀請締約方分享有關限制進口低效能源

產品和設備的國家政策、標準和立法的資訊。

在 Morane Godfrin （法國）和 Baba Dramé （塞內加爾）的共同主持下，聯絡小組於週三和週四舉行了會議，討論了決定草案是否僅關注於低效能源設備，或是應根據第 XXVII/8 號決定，逐步淘汰包含HCFCs等管制物質的產品進口。並討論了發布禁止進口設備和產品清單的規定，以及建議不要進口低效能源性能標準的設備和產品。在討論過程中，有締約方表示決定草案應包括一份法律禁止進口清單，並強制要求締約方提供相關資訊。另有締約方代表建議應擴大決定草案的範圍，邀請各締約方自願分享進口產品和設備有關的任何資訊，包括與能源效率有關的議題。第三位締約方代表則指出，向締約方更新和傳達此類資訊可能會給秘書處帶來額外的作業負擔。

最終在防止進口依賴管制物質或低效能源產品設備決議如下：

1. 邀請已限制進口含有管制物質的產品和設備的締約方自願向秘書處提供這一資訊;
2. 邀請已有進口禁止管制物質產品和設備之國家政策、標準或立法的締約方，自願將此類政策、標準或立法告知秘書處，並說明有關設備的類別;
3. 要求秘書處在其網站上公佈根據上述信息清單，並向秘書處提交更新資訊。

(十一) HFCs 之同分異構物

依據 2022 年醫藥與化學技術委員會 (MBTOC) 評估報告指出，部分 HFCs 之同分異構物亦屬於高溫暖化潛勢氣體，例如 HFC-245cb 其 GWP 值為 4,510 至 4,550，遠高於 HFC-245ca（GWP 為693）與 HFC-245fa（GWP 為1030）等附件F列管物質，但目前尚未列入吉佳利修正案之列管物質；此議題在本次會議期間沒有充足的討論時間，將待後續會議再予以討論。

(十二) 吉佳利修正案批准現況

截至 2024 年 11 月 1 日，目前批准吉佳利修正案的 160 個締約方，已有 154 個締約方建立氫氟碳化物 (HFCs) 之管理與許可制度，但仍有安哥拉、巴林王國、吉布地共和國、肯亞、聖馬利諾共和國及阿拉伯聯合大公國等 6 個締約方未依吉佳利修正案規定建

立相關制度，其中，肯亞已主動於本次會議上說明該國目前已進行相關制度研擬中；臭氧秘書處敦促前述尚未有許可制度之締約方，最遲應於 2025 年 3 月 31 日提報建立 HFCs 許可制度相關進展，以儘快參與達成修正案目標。

(十三) 蒙特婁議定書締約方第 37 次會議地點

將於2025年11月3日至7日在肯亞奈洛比召開蒙特婁議定書締約方第37次會議。

二、周邊會議

(一) 澳大利亞之冷媒生命週期管理方法

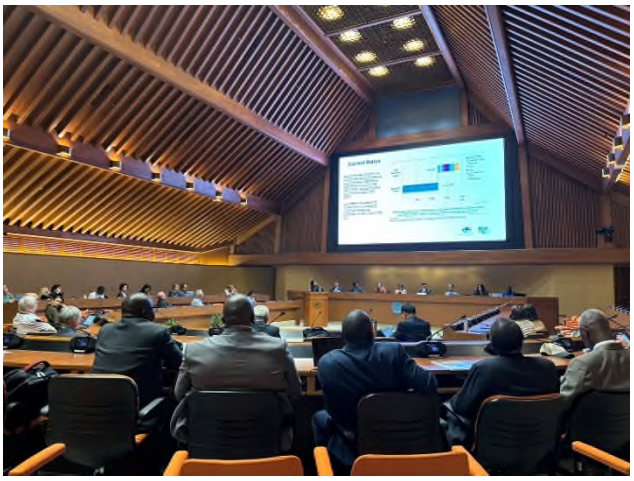
澳大利亞於 2004 年通過共同監管方式，開始實施冷媒生命週期管理，其中包括控管冷媒銷售、禁止使用一次性鋼瓶、要求使用冷媒的公司與技術人員應申請相關許可，以及強制規範冷媒應予回收。該周邊會議中，彙集了參與此一政策相關的政府機關、民間單位和業者，向與會代表說明澳大利亞冷媒生命週期管理執行方法，並說明面臨的困難與挑戰，以及後續進一步的改進措施。

(二) 提高能源效率：創新的冷媒永續解決方案

國際製冷研究所 (IIR) 提出了 Cool Up 計畫，倡議各締約方可共同支持並加入該計畫，並於周邊會議活動中，辦理了一場專注於提高能源效率和推進可持續解決方案的會議。會議中介紹了創新的節能冷卻技術，分享最佳實踐的方式，並強調能源效率和技術進步，能直接達到在降低溫室氣體排放方面的關鍵作用。並介紹了計畫中包含規劃支援節能冷卻的融資機制，以供締約方能達具體提高能源效率的機會。

(三) 連結利益相關者並創建生命週期冷媒管理 （LRM）之循環系統

日本環境省（MOEJ）、氣候與清潔空氣聯盟（CCAC）及日本海外環境合作中心（OECC）等單位，分享日本如何協助亞洲發展中國家建構冷媒生命周期管理及相關技術經驗，例如用於回收、再利用和銷毀廢棄冷媒，及鋼瓶的管理。日本以符合所定之法規管制方式，並搭提高行動透明度的追蹤系統（包含測量、報告和驗證：MRV）作法，達成整體之冷媒生命周期管理制度。



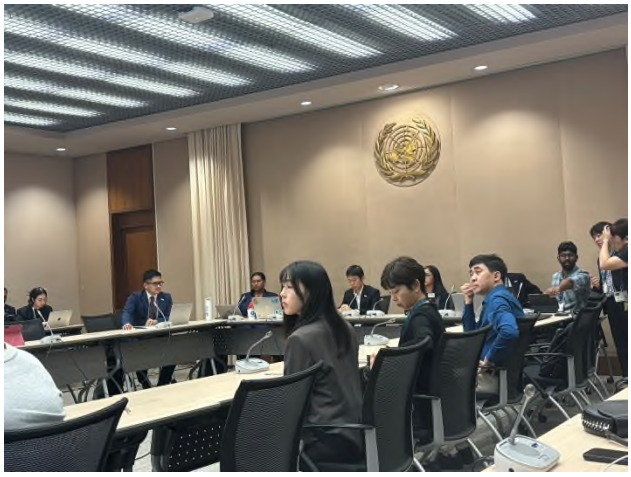


圖2，參加周邊會議辦理情形

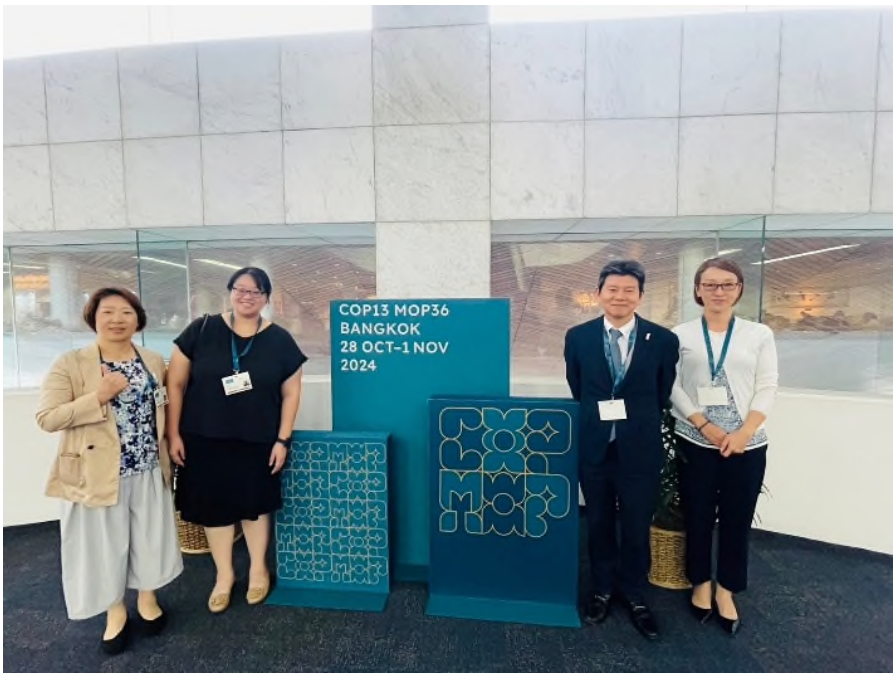
肆、重要議題國際交流情形

本次 MOP 36 會議期間，我團特別針對吉佳利修正案所管制之 HFC 使用於半導體製程之消費量認定、再生冷媒管理以及冷媒銷毀技術等議題，分別與日本、韓國、泰國及美國等各締約方代表，以及 TEAP 專家進行資訊交流。各議題交流內容與成果如下：

一、 半導體製程使用 HFCs 之消費量認定

我國半導體產業分別向日本、美國與中國進口 HFCs 以作為蝕刻製程之用，其中，近 6 成來自日本。惟製程中使用的 HFCs 是否可認定為原物用途而免納入消費量計算一事，經本次會議與 TEAP 委員江里口 武（Mr. Takeshi Eriguchi，日本籍）交流，其表示目前 TEAP 報告中所指半導體製程之 HFC-23 排放源，包括 HFC-23 於製程使用過程中的排放量，以及其他 PFCs 之副產物 HFC-23 排放量。而因蒙特婁議定書並未將原料用途（feedstock）納入國家消費量計算，惟原料用途之定義未臻明確，經江里口 武諮詢日本經產省實務作法，日本目前所申報為原料用途之數據，僅將反應與遭破壞的數量（假設約86%）納入原料用途的數量申報，而鋼瓶殘留量與最終排放量（假設約10%）則仍納入該國消費量申報。

另因本次會議有關 HFC-23 的議題，主要專注於排放量的推估，TEAP 專家表示，雖然報告中也有提到部分國家將半導體製程使用歸於原料用途，部分國家沒有，但會議過程中，並未有任何締約方針對此項提出質疑或疑問，因此也還不會有後續的決議文件，目前由各締約方自行決定是否將半導體製程使用歸於原料用途，尚無各國共通之作法，需再視下一次 TEAP 報告進展及締約方會議是否會有締約方提出討論。



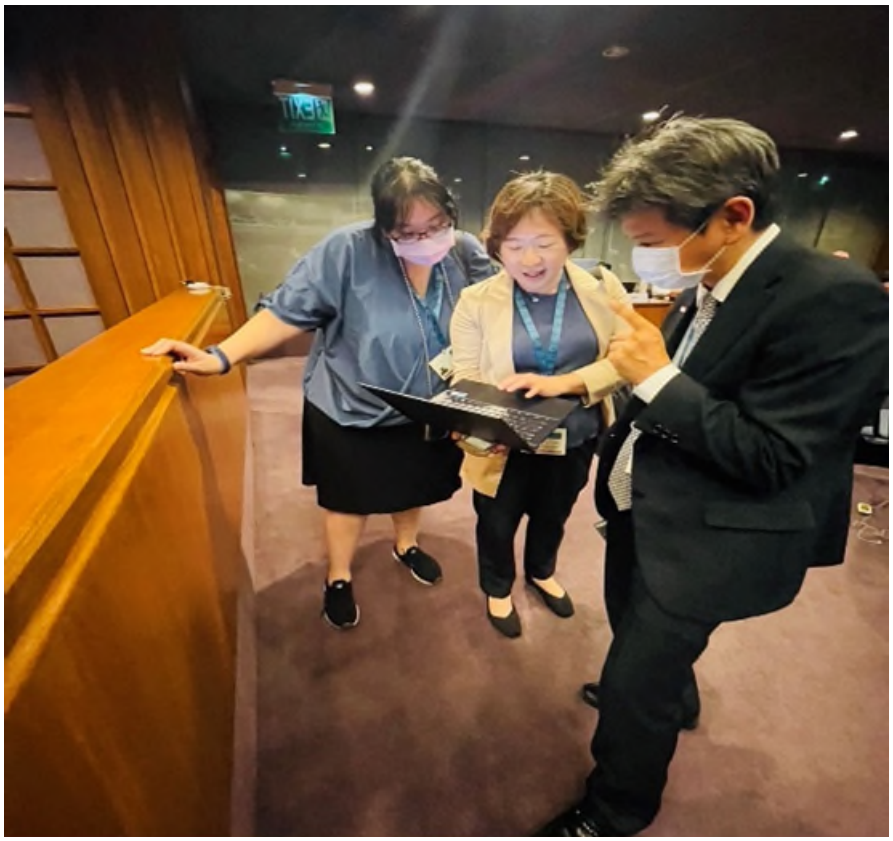


圖3、與TEAP委員江里口 武（Mr. Takeshi Eriguchi，日本籍，右一），討論半導體製程使用HFCs 之消費量認定

另本團考慮各締約方之產業特性，亦就本議題諮詢韓國代表，今年韓國政府機關未派員出席會議，但委託協助其研擬因應蒙特婁議定書與化武公約策略的單位：韓國石化公會（KPIA, Korea Petrochemical Industry Association）Ms. Mun Yeong Choi出席。該員表示，韓國目前亦規劃將半導體製程使用之 HFCs 列為原料用途，且計算其消費量基準量時，規劃不另納入生產或進口作為原料用途之 HFCs 數量。

本次會議中亦向美國環保署代表 Ms. Cindy Newberg 洽詢半導體製程之 HFC-23 排放應如何申報，其表示本次會議提案表格修訂是針對生產HFCs 等列管物質應申報其排放數據，因本國未有生產 HCFCs 或 HFCs 情形，作為半導體製程使用非屬此項，毋須申報此數據。

二、 冷媒回收之管理

日本已投入冷媒回收、再利用、再精製等相關作業，近年並持續拓展與東南亞國家合作，協助其建立冷媒回收與再利用程序。日本海外環境合作中心 (Overseas Environmental Cooperation Center, OECC) 於本屆會場展示小型冷媒回收設備與冷媒偵測器。此外，日本環境省、日本冷凍空調公會（JRAIA）、Climate and Clean Air Coalition (CCAC)、Initiative on Fluorocarbons Life Cycle Management (IFL)、OECC 等單位共同舉辦周邊會議，說明日本推動冷媒回收再利用流程。本團與 JRAIA 的 Mr. Koji Hatano、OECC 的 Mr. Makoto Kato 交流，表示日本係產業界及官方共同合作，以S＋3E的原則（安全、環境效益、能效、經濟可行）推動HFCs冷媒替代與回收再利用，202 2年已產生約 1200 公噸再精製冷媒（兩年內從 20% 提升至 35% ），惟其去化之管道尚未充分提升。

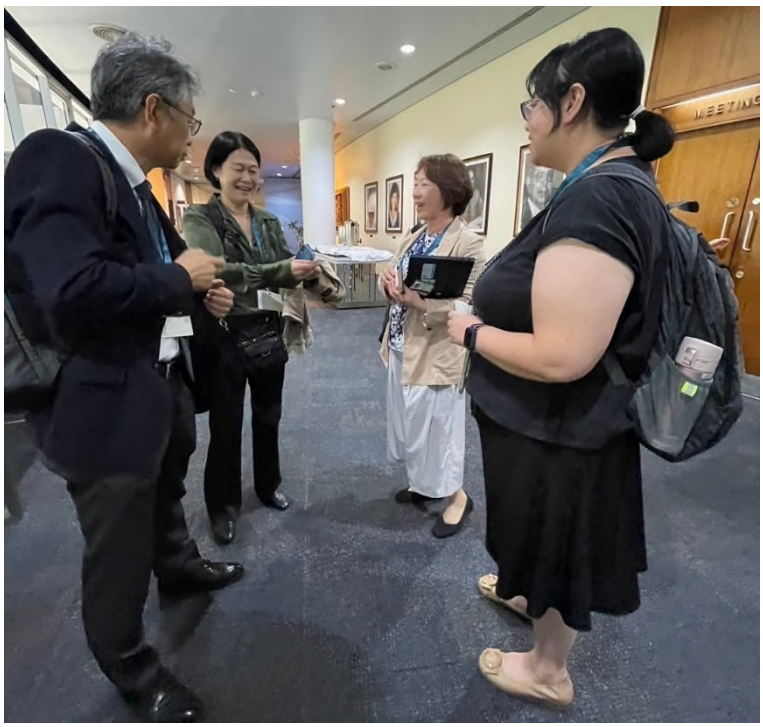


圖4、與JRAIA的Mr. Koji Hatano（左一），討論日本推動冷媒回收再利用流程

三、 冷媒銷毀實績交流

本團與協助泰國政府執行處理緝獲走私ODS銷毀計畫並取得自願減量碳額度之民間企業 Tradewater 的 Ms. Maria Gutierrez 與 Ms. Becky Romanovsky，以及泰國廢棄物管理公司 (WMS, Waste Management Siam Ltd.) 的 Mr. Prin Hanthanon 討論冷媒銷毀實務。其分享泰國目前處置冷媒的費用是一公斤約 60 元，且為執行自願減量專案計畫，需投入更多資金以進行第三方確查證工作，不符執行成本。

四、 其他蒙特婁議定書關注之相關議題

與前 TEAP 主席 Dr. Stephen O. Andersen（亦為前美國環保署官員）和我方交流蒙特婁議定書相關議題，其提出建議未來應關注兩點：

(一) 生產 HCFC-22 會產生副產物 HFC-23，若未來 HCFC-22

之市場需求減少，生產國家或僅進口的國家，HFC-23 消費量將持續增加，且生產國會銷毀 HCFC-22 而增加耗能，又會因減少銷毀高 GWP 值之 HFC-23 而可能增加供應過程之排放量，值得各國未來深入研究。

(二) 注意到家用空調設備安裝時太接近牆壁，造成熱氣排放不佳，影響設備的能效表現。因此，建議各國應研議設備離牆之適當距離。

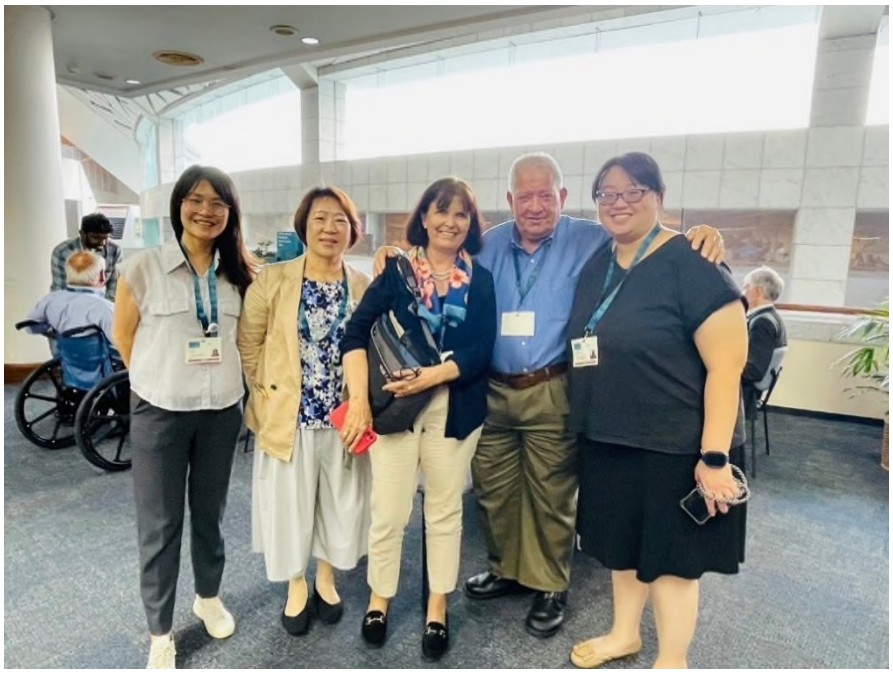


圖5、與前TEAP主席Dr. Stephen O. Andersen（右二）及TEAP共同主席Ms.Marta Pizano（中間）合影，討論蒙特婁議定書關注議題

表3、與國際專家交流紀錄

單位	與談人	討論內容
TEAP委員	Mr. Takeshi Eriguchi	半導體製程使用HFCs之消費量認定
韓國石化工會	Ms. Mun Yeong Choi	半導體製程使用

		HFCs 之消費量認定
美國代表	Ms. Cindy Newberg	半導體製程使用HFCs之申報方式
日本冷凍空調公會（JRAIA）	Mr. Koji Hatano	冷媒回收之管理
日本海外環境合作中心(Overseas Environmental Cooperation Center，OECC)	Mr. Makoto Kato	冷媒回收之管理
泰國民間企業Tradewater	Ms. Maria Gutierrez、Ms.Becky Romanovsky	冷媒銷毀實績交流
泰國廢棄物管理公司(WMS,Waste Management Siam Ltd.)	Mr. Prin Hanthanon	冷媒銷毀實績交流
TEAP前共同主席	Dr.Stephen O. Andersen	其他蒙特婁議定書關注之相關議題
TEAP共同主席	Ms. Marta Pizano	其他蒙特婁議定書關注之相關議題

伍、心得及建議

1. 本次為首次參與國際公約會議，進入大會議題討論時，大致上可區分為以美國為主的已開發國家一派，及以中國為主的開發中國家一派，分別代表進行各項議題的討論，其中，各議題又時常以已開發國家之資金來源，或是責任歸屬的問題而陷入癥

結，進而展開了後續漫長的聯絡小組會議討論。

2. 我國雖非蒙特婁議定書締約方，但歷來均遵循議定書之規範並提交相關數據，亦被視為締約方而得以締約國進行相關貿易往來，目前亦依公眾意見研處，辦理 HFCs 管理辦法草案之法制作業事宜，預估應可符合聯合國臭氧秘書處之規劃，於 2025 年 3 月 31 日前完成法規發布及配套措施建置。

3. 本次大會各方極為關注 TEAP 報告指出 HFC-23 的大氣觀測濃度顯著高於締約方申報數據情形，大會並決議加強全球對受控物質的大氣監測，特別是在未充分監測的地區，通過設置新監測站點和推動國際合作以提升監測能力。我國目前因尚未進行 HFCs 管制作業，現行亦無大氣觀測 HFCs 之機制，惟俟後續 HFCs 管理制度正式實施後，可參考溫室氣體之監測機制，研議我國之大氣觀測系統可行性，以掌握大氣中實際之排放情形。

4. 本次會議已與日本、韓國代表及 TEAP 委員確認，目前公約並未限制半導體產業製程使用之 HFCs 不得作為原料認定。又日本及韓國之相關法規及制度，均已將半導體產業製程使用之 HFCs 視為原料用途（惟各國採計方式及後續計算消費量方法仍有差異），因此，已參考日本及韓國兩國之制度，將消費量豁免計算申請由產業之主管機關協助作為原料認定的方式，擬定我國之 HFCs 管理制度，另基準量計算，考量目前公約已有之規範，以不另扣除作為原料使用之 HFCs ，符合公約一致性原則。

5. 本次大會中討論提到多項物質，均非屬於蒙特數議定書已列管物質，包含部分 HFCs 之同分異構物、極短壽命物質 (very short-lived substances, VSLS) 等，惟後續是否列入公約管理尚無定論，此項議題建議我國需持續蒐集相關訊息，並掌握國際最近動態以預為因應。

6. 蒙特婁議定書之管制架構為源頭削減（限制各國之生產量與進

出口量），但其最終目的為降低列管化學物質排放到大氣層中之濃度與數量，為避免因未能有效回收再利用而直接排放到大氣中，且降低列管化學物質供應不足之風險，日本與歐美等先進國家皆相當重視冷媒之回收再利用。惟本次與日本代表交流時，其亦表達雖已有相關冷媒回收、再利用、再精製之技術與流程，惟其去化亦尚未能顯著提升，與我國面對之瓶頸類似。

7. 另協助泰國政府執行處理緝獲走私 ODS 銷毀計畫之民間企業，目前已取得自願減量額度，後續如我國相關冷媒管制措施實施後，亦可能有部分業者為取得自願減量額度，而投入銷毀或回收之市場。建議可持續蒐集國際冷媒回收與再利用機制，並適時邀集國內冷凍空調廠商及公會共同商議，期能建立適合國內發展的冷媒回收再利用流程與作法。

8. 本次會議中，我團亦藉由工研院歷來參與締約方會議所累積的國際交流經驗，對於 HFCs 使用於半導體製程、冷媒的回收與銷毀等相關議題，分別與 TEAP 專家、韓國產業代表、美國、日本與泰國等各締約方代表討論並進行資訊交流，相關的國際交流情形除了作為我國後續研訂 HFCs 管制措施及冷媒管理等策略的重要參考來源外，亦各自保存了相關聯絡訊息，以建立未來諮詢或合作的聯繫管道。

9. 最後，身為一個有家中有 10 個月大男嬰及 3 歲女孩的職業媽媽，距離上一次因公出席國際會議竟已有 7 年之久，本次因應氣候變遷署後續承接了我國國內氫氟碳化物的管理業務，得以新增國際會議機會，出國前亦經主管提醒，作為機關代表，除了一個初次踏入相關國際性會議，亦是一場「學習之旅」。能順利完成本次國際會議行程，對於恪守工作崗位的各位主管、同仁，以及為這次國際會議盡力安排相關行程及會前提醒的外交部團隊、陪同出團的工研院同仁，還有為了讓我能獨自出國與會，所動員的各路親朋好友後援團，無盡感謝。

陸、附錄

附錄一、會議議程

附錄二、MOP 36會議紀錄報告

附錄三、MOP 36會議決議文件

摘要

今（2024）年於 10 月 28 至 11 月 01 日假泰國曼谷聯合國會議中心（United Nations Conference Center）召開保護臭氧層維也納公約第 13 次締約方會議(以下簡稱 COP 13,約每三年召開一次）暨蒙特婁議定書第 36 次締約方會議（簡稱 MOP 36，每年召開一次），本次會議計有超過 200 多個國家及民間單位參與。

本次會議辦理直至 2024 年 11 月 01 日星期五晚上 9 點 45 分宣布結束，其中，維也納公約部分共產出 4 個決議，蒙特婁公約共計產出 23 個決議內容，各項決議中值得我國持續關注之決議及其後續發展包括：

1. 鑑於蒙特婁議定書吉佳利修正案通過將屆滿 10 周年，目前批准吉佳利修正案的 160 個締約方,已有 154 個締約方建立氫氟碳化物 (HFCs) 之管理與許可制度，但仍有安哥拉、巴林王國、吉布地共和國、肯亞、聖馬利諾共和國及阿拉伯聯合大公國等 6 個締約方未依吉佳利修正案規定建立相關制度；聯合國環境規劃署臭氧秘書處敦促前述尚未有許可制度之締約方,最遲應於 2025 年 3 月 31 日提報建立HFCs許可制度相關進展。

2. 蒙特婁議定書之技術與經濟評估委員會 (Technology and Economic Assessment Panel, TEAP) 於會議中進行全球 HFC-23 排放評估報告,說明大氣觀測到之 HFC-23 濃度遠高於締約方所申報之消費量數據，TEAP 認為大部分的 HFC-23 排放仍有不明的其他來源。會議決議邀請締約方及科學機構進行 HFCs 的大氣監測和源頭研究。此外，並同時要求 TEAP 提供 HFC-23 作為副產品之排放監測、估算、報告和銷毀的最佳實踐指引資訊。

3. 另決議請具生產 HCFCs 或 HFCs 設施的締約方，自發性在 2025 年 3 月 31 日前於排放申報表格 6 填寫各項設施產生的 HFC-23 排放量及估算方法。

4. 臭氧秘書處邀請已限制含列管化學物質及低效能源產品設備進口的締約方，自願提供針對含列管化學物質的產品和設備的國家政策、標準或法規資料，並提供規範中所涉及的產

品或設備類別，後續將於秘書處網站上公布所蒐集的資訊清單。

5. 為加強議定書的執行，對於管制物質非法貿易遏止，將由彙整各締約方許可制度的匯編開始著手，並就締約方實際執行打擊非法走私情形，提交至不限成員名額工作小組 (Open-ended Working Group，OEWG) 第 47 次工作會議審議。

另本次會議我團特別針對吉佳利修正案所管制之 HFCs 使用於半導體製程之消費量認定、冷媒的回收管理以及冷媒銷毀及其他蒙特婁議定書關注之相關議題等議題，分別與 TEAP 專家、韓國產業代表、美國、日本與泰國等各締約方代表以及進行資訊交流，可作為我國後續研訂 HFCs 管制措施、冷媒回收管理等策略與精進冷媒銷毀技術之重要參考依據，並就溫室氣體減量推動實務之交流，建立未來合作聯繫管道。

目錄

壹、前言

「蒙特婁議定書」是聯合國為了避免工業產品中的氟氯碳化物對地球臭氧層繼續造成惡化及損害，承續 1985 年保護臭氧層維也納公約的大原則，於 1987 年 9 月 16 日邀請所屬 26 個會員國在加拿大蒙特婁所簽署的環境保護議定書，以管制臭氧層破壞物質(Ozone Depleting Substances，ODSs)。

該議定書自 1989 年 1 月 1 日起生效後，聯合國環境規劃署(United Nations Environment Programme，UNEP) 臭氧秘書處隨即每年召開 1 次締約方會議 (Meeting of the Parties，MOP)，檢討議定書執行的現況、並協商其他 ODSs 的管制方案及討論衍生的管制議題。如有增加新的管制方案與物質，締約方會議會產出修正案(Amendments)；若無新增管制項目，僅是加嚴現有管制方案，締約方會議則會產出調整案 (Adjustments)，截至目前為止，蒙特婁議定書共計產出 5 個修正案與 14 個調整案。

其中，最新之「吉佳利修正案」 (Kigali Agreement) 係基於蒙特婁議定書自 1996 年開始管制氟氯碳化物 (CFCs) 與氟氯烴(Hydrochlorofluorocarbons，HCFCs) 後，主要推動的冷媒替代品為氫氟碳化物 (HFCs)，其中包括 HFC-134a、HFC-410A、HFC-404A 等各類純物質及其混合物。這些替代品雖無臭氧層破壞潛勢 (Ozone Depletion Potential，ODP)，但卻屬於高溫暖化潛勢 (Global Warming Potential，GWP) 物質，排放到大氣之後會加劇全球暖化與氣候變遷問題，亦為我國氣候變遷法所明定之溫室氣體之一；因此，於 2016 年第 28 次締約方會議 (MOP 28) 上，通過「吉佳利修正案」，將HFCs納為公約管制物質並訂定各締約方應遵守的削減時程，其管制削減的方式，依循 CFCs 與 HCFCs 削減模式，從源頭（生產與進口）逐步削減 HFCs 的消費量與生產量。

我國雖非聯合國會員國而無法成為蒙特婁議定書締約方，但為避免國內產業受到貿易阻礙，已依循蒙特婁議定書相關規定，陸續發布「蒙特婁議定書列管化學物質管理辦法」、「氟氯烴消費量管理辦法」以及「溴化甲烷管理辦法」，以管制我國 CFCs、海龍、HCFCs

以及溴化甲烷等破壞臭氧層物質之進出口與製造等行為，目前亦加速辦理氟氯碳化物相關法規草案之法制作業。此外我國亦自 1990 年起，每年以財團法人工業技術研究院之非政府組織 (Non-governmental organization，NGOs) 身分，派員出席蒙特婁議定書締約方會議，以掌握蒙特婁議定書最新管制趨勢，及參與周邊相關會議，據以滾動檢討我國相關法令與管制作為，並運用此一場合與相關國家及民間機構進行交流，進一步向國際間展現我國遵循國際公約之管制作為與成效。

本次所參加的蒙特婁議定書第 36 次締約國會議 (MOP 36) 除討論眾多議案外，面對吉佳利修正案生效將屆滿 10 年，更提出了多項關於改進申報數據、加強區域監測及回收管理的倡議，同時亦展望未來，強調如何協調各方以解決溫室氣體排放及提高能效之挑戰的溝通與討論。本署亦透過本次會議，初步學習國際公約會議的運作模式，並就溫室氣體減量推動實務，與相關國家代表團或技術專家等進行交流，建立未來合作聯繫管道，持續掌握國際間最新HFCs削減技術及最新管制趨勢。

貳、與會人員及行程

一、與會人員

本次由環境部氣候變遷署盧佩君科長代表參加，另駐泰國台北經濟文化辦事處政務組鄭舜丞副組長協助國外事務及報到，以及財團法人工業技術研究院楊斐喬經理及徐麗瀅工程師偕同與會參加，成員任務分工如表 1。

表 1、成員任務分工表

單位	職稱	姓名	任務分工
環境部氣候變遷署	科長	盧佩君	吉佳利修正案各國推動及管

			制現況資訊蒐集，對外交流及行政事務
外交部	駐泰國台北經濟文化辦事處政務組副組長	鄭舜丞	國外事務及報到
財團法人工業技術研究院	經理	楊斐喬	協助掌握會議執行進展、協助與國際友人聯絡交流、蒐集國際替代產品或技術進展
	工程師	徐麗瀅	

二、行程規劃

本次會議期間自 113 年 10 月 28 日至 113 年 11 月 1 日，共計 5 天，會議地點為泰國曼谷聯合國會議中心（United Nations Conference Center），會議行程如表 2所述。

表 2 會議行程表

日期	行程
10 月 27 日(日)	搭機前往泰國曼谷，預為準備會議資料
10 月 28 日(一)	**預備會議** (一) 完成會場報到 (二) 聯合國環境規劃署 (UNEP) 代表致歡迎詞，預備會議開幕 (三) 會議架構：確認預備會議討論議題項目、會議工作程序與架構 (四) 维也納公约信託基金和蒙特婁議定書信託基金預算與財務報告 (五) 蒙特婁議定書議題 1. 審議蒙特婁議定書下設各機構 2025 年成員 (1)不遵守蒙特婁議定書程序下設履行委員會成員 (2)執行蒙特婁議定書多邊基金執行委員會*

日期	行程
	(3)工作組共同主席 2.HFC-23 排放問題 (1)由科學評估委員會 (Scientific Assessment Panel，SAP) 及技術暨經濟評估委員 (Technology and Economic Assessment Panel，TEAP) 進行排放評估報告（第 XXXV/7 號決定第 1 和第 2 段） (2) HFC-23 申報表格 3.冷媒生命周期管理，包括冷媒生命周期管理工作坊成果（第 XXXV/11 號決定） 4.壽命極短物質討論 5.列管物質作為原料用途 6.強化蒙特婁議定書列管物質之全球與區域性監測 7.海龍替代品與其可取得性 8.技術暨經濟評估委員會 (TEAP) 審查 A5 國家遵約情形 9.能源效率議題 (1) 不進口低能源效率產品 (2) 強化設備能源效率 10. 蒙特婁議定書之豁免議題：溴化甲烷 2025 申請情形 11. 技術暨經濟評估委員會 (TEAP) 成員異動 12. 蒙特婁議定書吉佳利修正案批准情形
10 月 29 日(二)	**預備會議** (一) 接觸小組會議情形報告 1.列管物質作為原料用途 2.壽命極短物質 3.海龍替代品與其可取得性 4.強化蒙特婁議定書列管物質之全球與區域性監測 (二) 蒙特婁議定書議題討論 1.各締約方遵約與提交數據情形 2.將巴勒斯坦納入蒙特婁議定書第 5 條第 1 款之締約方，並獲得多邊基金支持 (三) HFC-23 排放問題 (四) 維也納公約議題 1.維也納公約締約方臭氧研究管理人員第 12 次會議報告 2.信託基金提供维也纳公约所涉研究和系统性觀測活動報

日期	行程
	告 (五) 其他事項與提案 1. HFCs 同分異構物 2. 展延第 5 條之締約方履行期限 3. 噴霧罐推進劑之低 GWP 替代品 4. HFC-23 申報表格 5. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構
10 月 30 日(三)	**預備會議** (一) 前日接觸小組討論之情形於大會報告 1. 展延第 5 條之締約方履行期限 2. HFC-23 申報表格 3. 冷媒生命周期管理 4. HFC-23 排放問題 5. 噴霧罐推進劑之低 GWP 替代品 6. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構 (二) 接觸小組會議討論議題 1. 能源效率議題 (1) 不進口低能源效率產品 (2) 強化設備能源效率 2. 壽命極短物質 3. 強化蒙特婁議定書列管物質之全球與區域性監測 4. 列管物質作為原料用途 5. 展延第 5 條之締約方履行期限 6. 噴霧罐推進劑之低 GWP 替代品 7. HFC-23 排放問題 8. HFC-23 申報表格 9. 強化蒙特婁議定書之相關機構：包含打擊非法貿易機構 10. 冷媒生命周期管理 11. 海龍之回收、再生及再利用
10 月 31 日(四)	**高階會議** (一) 開幕典禮：COP 12 主席、UNEP 副執行主任、泰國工業部部長代表致詞 (二) 會議架構：MOP 36 主席選舉、確認高階會議議程、會議工作

日期	行程
	(三) 程序與架構、各單位代表之到任文件（Credentials of representatives） (四) 各評估小組綜合報告 (五) 多邊基金執行委員會主席報告基金執行內容與進展 (六) 各國代表致詞 (七) 工作小組討論 1. 壽命極短物質 2. 強化蒙特婁議定書列管物質之全球與區域性監測 3. HFC-23 排放
11 月 1 日(五)	**高階會議** 1. MOP 36 預備會議決議結果說明 2. MOP 37 會議地點與時間 3. 其他事項 4. MOP 36 會議決議 5. MOP 36 會議決議確認通過 **由泰國曼谷搭機返國**

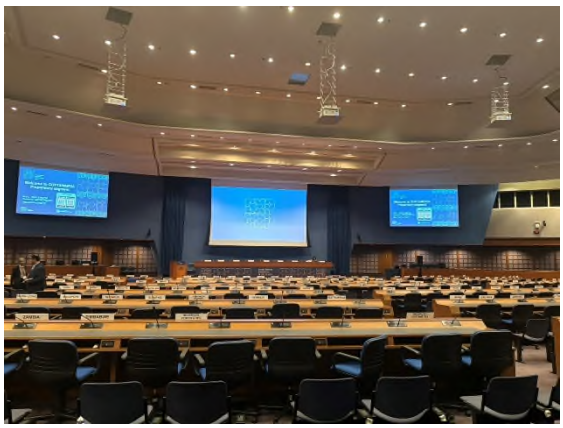


圖1、會議地點：泰國曼谷聯合國會議中心（United Nations Conference Center）

參、會議討論內容及決議

本次 MOP 36 我團以財團法人工業技術研究院之 NGOs 身分參加，於 2024 年 10 月 28 日順利完成報到並取得入場證，會議過程中除了參與 MOP 36 之主會場大會外，亦參加了周邊會議及有興趣之聯絡小組議題會議，以下重點摘要我國應持續關注之決議、議題及其後續發展如下:

一、MOP 36 會議討論內容及決議

本次會議維也納公約部分共產出 4 個決議，蒙特婁公約共計產出 23 個決議內容，我國應持續關注及追蹤後續發展之決議內容如下:

(一) HFC-23排放管理及修訂HFC-23數據報告格式

1. HFC-23排放管理：

第 XXXV/7 號決議已要求 SAP 及 TEAP 在大會提交 HFC-23 排放情形報告，本次會議中，SAP 及 TEAP 即依上開決議事項進行報告。依 SAP 說明，其研究報告顯示自 2014 年後，締約方所蒐集全球 HFC-23 排放量申報數據，與根據觀測得到的大氣中 HFC-23 排放估計值之間存在顯著差距，其中約有75-89%的排放量並未含括在申報數據資料中。此外，依據研究結果，推估中國在其申報數據以外的 HFC-23 排放量，便已佔了全球排放缺口至少 20-50%。

TEAP 報告中則說明 2022 年之全球消費量為 3684.3 公噸，而作為原料用途之數量為 1,070 公噸。假設排放係數為 2.1%，估算排放量約為 22 公噸。但大氣觀測到之 HFC-23 濃度遠高於締約方所申報之消費量數據，依觀測濃度推估，2022 年約排放達 14,000 公噸。因此，TEAP 目前認為大部分的 HFC-23 排放係基於不明的其他來源（現行已知 HFC-23 的用途別，則包括超低溫冷凍冷藏冷媒、滅火藥劑及半導體製程蝕刻清洗等）。考量 HFC-23 來源除原有認知的 HCFC 副產物以外，可能係由大氣中衍生或其他來源產出，目前因為沒有明確的研究資料，無法解釋這些差異性，但 TEAP 提出建議可修正申報表格 6 號來協助處理此一議題。在全體會議中進

行了長時間的問答環節後，美國和中國分別宣佈將與其他締約方合作提交會議文件 (conference room paper，CRP)。

美國與加拿大共同發起了 UNEP/OzL.Pro.36/CRP.7提案，該提案指出，根據會議中 SAP 及 TEAP 報告訊息，可得出的中國東部排放量估計值遠高於預期,要求相關方採取必要行動以履行 HFC-23 排放管理的義務，且需調查其申報排放量與大氣監測得出的排放量估計值之間存在偏差的潛在原因。

中國則提出了 UNEP/OzL.Pro.36/CRP.8文件，呼籲應加強對全球 HFC-23 排放和數據報告的研究；並邀請擁有 HCFC-22 生產設施的締約方自願報告其目前核算結果和申報 HFC-23 排放（包括逸散性排放）的方法；以及要求臭氧秘書處成立一個專家工作小組，研究和制定相關技術準則，供締約方申報 HFC-23 排放情形。

2 份 CRP 文件於會議中歷經了長時間的爭論，中國認為美國與加拿大的提案將一個全球問題定位為某一個締約國問題，對相關方是“不科學”、“不切實際”和“不尊重”的行為。美方則澄清 CRP.7 中概述的任何要求都並非強制性，後續美國亦承認 HFC-23 排放是一個全球性問題,但表示仍必須考慮有關特定區域排放的科學數據。

前開爭議後續決定成立聯絡小組進行 CRP.7 和 CRP.8 的討論,該聯絡小組由 Shontelle Wellington（巴巴多斯）和 Paul Krajnik（奧地利）共同主持，經過了 6 次小組會議的討論，最終於週五下午 6 點半，達成一致共識，將草案提交全體會議。

大會最終決定事項如下：

(1) 議定書締約方會議邀請相關方展開並鼓勵與科學研究機構合作進行 HFC-23 大氣監測和 HFC-23 排放源的研究,並分享相關結果。

(2) 請擁有 HCFC-22 生產設施的締約方在 2025 年 3 月 31 日之前自願向臭氧秘書處提交其目前估算的數據 並報告國內進行 HCFC-22 生產時，HFC-23 排放情形。

(3) 邀請已採用最佳技術減少 HFC-23 排放的締約方在 2025 年 3 月 31 日之前自願向臭氧秘書處提供此類資訊。

(4) 要求 SAP 更新關於 HFC-23 的第 XXXV/7 號決議報告

內容，以反映更多的即時新資訊，並就此事項於議定書締約方會議第 37 屆會議提交報告;另要求 TEAP 提供有關測量、估計、報告和驗證 HFC-23 副產品排放及其銷毀的最佳實踐和指引資料。

2. HFC-23 的數據申報表單修正：

在不限成員名額工作小組(Open-ended Working Group，OEWG)第 46 屆會議上，秘書處已提出了更改數據申報表 3（涉及生產數據）的建議，一些締約方也建議可更改數據申報表 4 （涉及銷毀）和數據申報表 6 （涉及 HFC-23 排放）。美國於本次會議上，提出會議文件提案包含修訂後的數據申報表，旨在使各不同的管制物質申報方式一致，後續成立了聯絡小組進行本提案討論。

聯絡小組共召開 4 次會議，討論內容包含提案方要求 TEAP 應提供的資訊;申報表格的架構；如何以申報表格反應製造、輸入或輸出，及銷毀並導出相關數據及資料。

最終議定書締約方會議批准了經修訂的數據申報表格 3 和申報表格 6，以及申報數據表格的填寫說明。

(二) 促進冷媒生命周期 (life-cycle refrigerant management，LRM)管理及相關工作坊成果

第一日會議中（週一），OEWG 聯合主席 Brieskorn 介紹了在大會前一日（10 月 27 日）所舉辦的促進冷媒生命周期管理工作坊成果，在工作坊會議中，一些締約方呼籲希望為第 5 條發展中國家提供財政支援，以培訓冷媒回收管理的技術人員，並購置回收和再利用的裝備，以及呼籲提供有關清除處理含有冷媒設備的資訊。

密克羅尼西亞聯邦 (FSM) 就該議題提出了一項決定草案，呼籲 TEAP 提供更多關於 LRM 的資訊，並請臭氧秘書處彙編線上 LRM 資料庫、強化締約方的 LRM 管理政策。OEWG 聯合主席 Brieskorn 建議就上述議題成立聯絡小組，由 Morgan Simpson （英國）和 Osvaldo Alvarez Perez （智利）共同擔任聯絡小組主持人。

該小組後續舉行了 4 場會議，最終在關於 LRM 的決定中，議定書決議要求 TEAP 在 2025 年及其後續進展報告（包括預計於 2026 年發布的 4 年期評估報告）中，納入有關各締約方或區域對

於 LRM 的最新相關信息，同時請執行委員會和秘書處繼續研議強化 LRM 的方法;要求秘書處彙編關於 LRM 的資訊並將其公布在網站上;鼓勵第 5 條締約方在制訂和實施基礎設施管理時，將 LRM 納入，進行整體考量。

(三) 針對極短壽命物質 very short-lived substances (VSLS) 的應對措施

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了極短壽命物質 very short-lived substances (VSLS) 議題，於 2024 年 TEAP 評估報告指出，極短壽命物質 very short-lived substances (VSLS) 涵蓋二氯甲烷、三氯甲烷、1,2-二氯乙烷、三氯乙烯及全氯乙烯等，這些物質非蒙特婁議定書管制物質，其臭氧層破壞潛勢 (Ozone Depletion Potential，ODP) 值極低但不為零，且在大氣的壽命不到 6 個月;儘管 VSLS 對平流層總氯濃度的貢獻度相對較小，但其貢獻度持續增加，2020 年約占平流層總氯濃度之 4%。後續於 Heidi Stockhaus （德國）和 Juan Jose Galeano （阿根廷）共同主持的聯絡小組中繼續審議此議題。

聯絡小組舉行了 3 場次會議討論關於 VSLS 的決定草案（UNEP/OzL.Pro.36/CRP.12）內容，與會代表一致認為需要更新有關二氯甲烷、三氯甲烷、二氯乙烷、三氯乙烯和全氯乙烯等五種 VSLS 在過去五年的增長趨勢與相關資料。另該聯絡小組討論了是否要求 TEAP 提供有關已確定的五種 VSLS 的臭氧消耗潛勢 （ODP） 和影響臭氧層的最新資訊。

締約方會議在 VSLS 的最終決定上，要求 TEAP 和 SAP 在 2026 年評估報告中納入有關討論 VSLS 資料並於 OEWG 第 49 次會議審議，其報告內容應包含：五種 VSLS 最新資訊，包括作為溶劑和原料用途，以及 VSLS 過去五年的增長趨勢、ODP 以及對平流層臭氧層的影響等；有關 VSLS 替代品的其他資訊；估計 VSLS 的年產量和消費量及年排放量；另請 SAP 評估 VSLS 的 ODP 及對平流層總氯輸入的貢獻，以及對平流層臭氧層的可量化影響。

(四) 管制物質的原料用途管理

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了管制物質的原料用途管理議題，並說明在管制物質的生產、運輸、分銷、

儲存、處理、重新包裝和用作原料過程中，應盡量減少其排放。

後續由 Ryan Ooi Chean Weai(馬來西亞)和 Michel Gauvin（加拿大）共同主持該議題的聯絡小組會議，聯絡小組於週三舉行公開會議，並於週四和週五在僅限締約方的情況下舉行會議。小組在會中討論了如何最大限度地減少排放及最佳可行控制技術相關問題，以及是否應建立一個資金窗口以支援生產製造相關的專案議題，以採行最佳可行控制技術，最大限度地減少用作原料的管制物質排放。

最後議定書締約方在管制物質的原料用途管理的決議事項如下：

1. 要求盡量減少管制物質在生產、運輸、分銷、儲存、處理、重新包裝和用作原料過程中的排放，或使用最佳可行控制技術，或採製程變更、縮減或銷毀來減少排放
2. 鼓勵各締約方依各國國情，參考使用 TEAP 於 2024 年進度報告中已提出的確定方法和技術，減少管制物質在生產、運輸、分銷、儲存、處理、重新包裝和用作其他化學品製造原料過程中的排放
3. 鼓勵擁有相關做法和技術的締約方向秘書處提供資訊，以協助締約方促進應用;
4. 邀請生產和使用受管制物質作為原料的締約方在 2025 年 5 月 1 日之前自願向秘書處提供資訊，說明其為管理此類生產和使用而建立的管制制度，包括由此產生的排放管制措施;並請秘書處整理所提供的資訊，提供 OEWG 第 47 次會議審議。

(五) 加強全球與區域大氣監測

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了這一議題並決議成立一個聯絡小組，由 Liana Ghahramanyan（亞美尼亞）和 Alessandro Giuliano Peru（義大利）共同主持。

該小組後續於締約方會議期間舉行了多場會議，重點包含了關注如何評估適宜之潛在監測點位方式;諮詢各締約方建置監測機制的流程;研析與其他相關機構共同出資以支應監測計畫方案;以及評估監測資金來源和所需金額範圍。

最後有關加強全球與區域大氣監測議案決定事項中，議定書締

約方會議要求秘書處評估適合監測管制物質的區域排放地點，並由蒙特婁議定書信託基金的現金餘額中撥款 400,000 美元支應;要求秘書處諮詢委員會研議可能的監測地點、如何利用現有設施並與其他可執行監測相關計畫的組織保持聯繫，並協調合作後續監測事項;要求執行委員會考量資助部分點位的監測專案，以加強大氣監測並於下次 MOP 37 會議中報告。

(六) 噴霧罐吸入器（MDIs）低溫暖化潛勢（GWP）替代品

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了這一議題，提出為了推動高 GWP 噴霧罐吸入器使用替代產品之過渡時期措施（第XXXVI/[D]號決定草案），決議成立一個聯絡小組，由 Henry Wöhrnschimmel （瑞士）和 Noe Megrelishvili （喬治亞）共同主持。該小組舉行共 4 場次會議，討論了向 TEAP 提出的繼續“監測”和更新 MDIs 及其替代品發展情況的要求，並提供有關低GWP的噴霧罐吸入器的最新資訊，包括其技術可行性、經濟可行性、安全性和在發展中國家的使用情形。

最終在關於使用低 GWP 的噴霧罐吸入器決定如下：

1. 邀請生產 MDIs 的締約方在 2025 年 6 月之前自願向秘書處提交關於使用低 GWP 的噴霧罐吸入器產品開發進展和其他替代品的可得性，以及過渡期間之相關經驗;
2. 要求 TEAP 繼續提供有關低 GWP 的噴霧罐吸入器產品的最新資訊，並補充於 2026 年之四年期評估報告中，包括關於其技術可行性、經濟可行性、安全性和第 5 條締約方的使用情形資訊;
3. 鼓勵締約方根據 TEAP 2026 年之4年期評估報告中提供的更新資訊，於 2027 年前重新審視各國 MDIs 採用低 GWP 替代品情形。

(七) 海龍及其替代品

第一日會議中（週一），OEWG 聯合主席 Brieskorn 介紹了這一議題並成立了一個聯絡小組，由 Andrew Clark （美國）和 Ali Tumayhi （沙烏地阿拉伯）擔任聯合主席。聯絡小組於週一晚上、週三和週四舉行會議，會議主要共識包含了各方應避免故意銷毀回收

的海龍，除非這些海龍無法後續再利用，另外對於是否應該“要求”或改用“鼓勵”各締約方回收海龍的部分，進行了持續性的辯論。

最終在關於回收或再利用海龍此議題相關決定中，議定書締約方會議委員會敦促締約方應避免銷毀可回收或再利用的海龍，並確保仍有足夠的回收或可再利用的海龍庫存,以滿足預期的未來需求，並邀請各締約方鼓勵利益關係者採取上述行動，內容如下：

1. 確保在維護和維修設備期間，或在拆卸和處置設備之前，回收海龍以進行回收和再利用
2. 重新考慮對回收海龍進出口的限制，以促進回收海龍的越境轉移和再利用，並且需兼顧《巴塞爾公約》的要求;
3. 提高對海龍可持續管理重要性的認識，在有替代品的情況下避免使用海龍，並告知消費者需要為未來海龍供應減少的風險做好準備。
4. 請臭氧秘書處就海龍可持續管理的重要性與相關國際機構聯絡，並向締約方報告。

(八) 第 5 條第 2 組之締約方履約情形：TEAP 技術評估報告決議

OEWG 聯合主席 Brieskorn 指出，在 OEWG 第 46 屆會議上，印度、巴林、科威特、卡達和沙烏地阿拉伯共同提出了一項決定草案（涉及第XXVIII/2號決定第5段內容），請 TEAP 提供關於氫氟碳化合物替代品的資訊，以提供第 5 條第 2 組締約方在凍結氫氟碳化合物消費量時參考使用。

聯合主席 Brieskorn 提議成立一個聯絡小組，由 Cornelius Rhein （歐盟）和 Ana Maria Kleymeyer （密克羅尼西亞聯邦）共同主持。該小組在週二、週三、週四和周五舉行會議，討論了 TEAP 提供哪些額外資訊，以及決定草案的標題文字是否修正以核實反映內容；TEAP 所提報告是否應指定更低的 GWP 物質替代方案;決定草案是否強調對象僅為第 5 條第 2 組締約方；以及是否在第 2 組締約方中納入有關過度期之資訊。

最終在關於根據第 XXVIII/2 號決定第 5 段，有關 TEAP 技術評估報告決議事項,議定書締約方會議要求 TEAP 在 2026 年的

4 年期評估報告，提供第 5 條第 2 組締約方有關低 GWP 之氫氟碳化合物替代品的最新情況，以便為氫氟碳化合物消費量凍結做準備，提供之資訊應包括下列內容：

1. 可採用性及其挑戰和障礙;

2. 考量不同國家/地區的設備容量、替代製冷劑和設備標準;

3. 市場結構以及供應鏈問題;

4. 應對採用替代方案的挑戰和障礙的備選方案;和

5. 關於採用替代方案的成本資訊。

(九) 打擊非法貿易及加強議定書機構的下一步行動

第一日會議中（週一），OEWG 聯合主席 Mohamed 介紹了歐盟提出之 CRP 文件，要求臭氧秘書處分享有關管制物質非法生產和非法貿易的資訊，以加強議定書的執行並面對相關的挑戰。本議案決定成立一個聯絡小組，由 Fathmath Usra （馬爾地夫）和 Jana Maščková （捷克）共同主持。

最終在關於加強打擊非法貿易的議題中，議定書締約方會議決議如下：

1. 要求臭氧秘書處更新其對於第 XXXIV/8 決定第4段（b）的回應，確定各締約方已有許可管制的機制；辦理各締約方許可制度及實際執行案例的彙編；並將此信息提供給各締約方並於 OEWG 第 47 屆工作會議審議；

2. 邀請尚未有許可制度的締約方向秘書處提供其所規劃許可制度的資訊;

3. 要求秘書處在 OEWG 第 47 屆會議之前，提供締約方相關彙整資料，包含防止管制物質非法貿易的最佳做法，供議定書第 37 次締約方會議前舉辦一日非正式會議，討論如何落實蒙特婁議定書的執行。

(十) 防止進口依賴管制物質或低效能源產品設備

第一日會議中（週一），OEWG 聯合主席 Mohamed 決議成立一個聯絡小組，以繼續審議吉爾吉斯斯坦在 OEWG 第 46 屆會議上提出的決定草案，該草案邀請締約方分享有關限制進口低效能源

產品和設備的國家政策、標準和立法的資訊。

在 Morane Godfrin （法國）和 Baba Dramé （塞內加爾）的共同主持下，聯絡小組於週三和週四舉行了會議，討論了決定草案是否僅關注於低效能源設備，或是應根據第 XXVII/8 號決定，逐步淘汰包含HCFCs等管制物質的產品進口。並討論了發布禁止進口設備和產品清單的規定，以及建議不要進口低效能源性能標準的設備和產品。在討論過程中，有締約方表示決定草案應包括一份法律禁止進口清單，並強制要求締約方提供相關資訊。另有締約方代表建議應擴大決定草案的範圍，邀請各締約方自願分享進口產品和設備有關的任何資訊，包括與能源效率有關的議題。第三位締約方代表則指出，向締約方更新和傳達此類資訊可能會給秘書處帶來額外的作業負擔。

最終在防止進口依賴管制物質或低效能源產品設備決議如下：

1. 邀請已限制進口含有管制物質的產品和設備的締約方自願向秘書處提供這一資訊;
2. 邀請已有進口禁止管制物質產品和設備之國家政策、標準或立法的締約方，自願將此類政策、標準或立法告知秘書處，並說明有關設備的類別;
3. 要求秘書處在其網站上公佈根據上述信息清單，並向秘書處提交更新資訊。

(十一) HFCs 之同分異構物

依據 2022 年醫藥與化學技術委員會 (MBTOC) 評估報告指出，部分 HFCs 之同分異構物亦屬於高溫暖化潛勢氣體，例如 HFC-245cb 其 GWP 值為 4,510 至 4,550，遠高於 HFC-245ca（GWP 為693）與 HFC-245fa（GWP 為1030）等附件F列管物質，但目前尚未列入吉佳利修正案之列管物質；此議題在本次會議期間沒有充足的討論時間，將待後續會議再予以討論。

(十二) 吉佳利修正案批准現況

截至 2024 年 11 月 1 日，目前批准吉佳利修正案的 160 個締約方，已有 154 個締約方建立氫氟碳化物 (HFCs) 之管理與許可制度，但仍有安哥拉、巴林王國、吉布地共和國、肯亞、聖馬利諾共和國及阿拉伯聯合大公國等 6 個締約方未依吉佳利修正案規定建

立相關制度，其中，肯亞已主動於本次會議上說明該國目前已進行相關制度研擬中；臭氧秘書處敦促前述尚未有許可制度之締約方，最遲應於 2025 年 3 月 31 日提報建立 HFCs 許可制度相關進展，以儘快參與達成修正案目標。

(十三) 蒙特婁議定書締約方第 37 次會議地點

將於2025年11月3日至7日在肯亞奈洛比召開蒙特婁議定書締約方第37次會議。

二、周邊會議

(一) 澳大利亞之冷媒生命週期管理方法

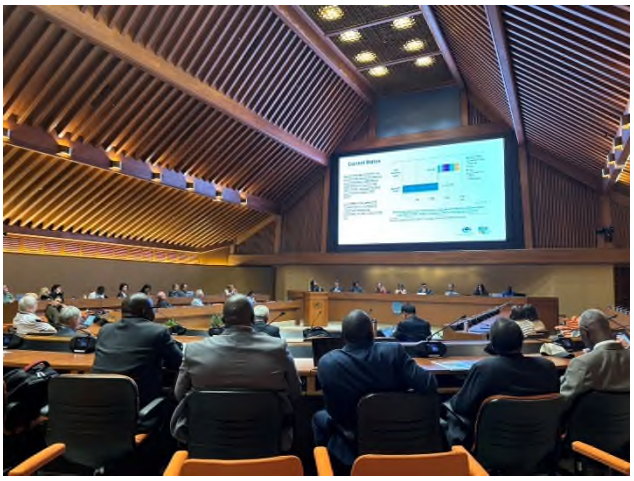
澳大利亞於 2004 年通過共同監管方式，開始實施冷媒生命週期管理，其中包括控管冷媒銷售、禁止使用一次性鋼瓶、要求使用冷媒的公司與技術人員應申請相關許可，以及強制規範冷媒應予回收。該周邊會議中，彙集了參與此一政策相關的政府機關、民間單位和業者，向與會代表說明澳大利亞冷媒生命週期管理執行方法，並說明面臨的困難與挑戰，以及後續進一步的改進措施。

(二) 提高能源效率：創新的冷媒永續解決方案

國際製冷研究所 (IIR) 提出了 Cool Up 計畫，倡議各締約方可共同支持並加入該計畫，並於周邊會議活動中，辦理了一場專注於提高能源效率和推進可持續解決方案的會議。會議中介紹了創新的節能冷卻技術，分享最佳實踐的方式，並強調能源效率和技術進步，能直接達到在降低溫室氣體排放方面的關鍵作用。並介紹了計畫中包含規劃支援節能冷卻的融資機制，以供締約方能達具體提高能源效率的機會。

(三) 連結利益相關者並創建生命週期冷媒管理 （LRM）之循環系統

日本環境省（MOEJ）、氣候與清潔空氣聯盟（CCAC）及日本海外環境合作中心（OECC）等單位，分享日本如何協助亞洲發展中國家建構冷媒生命周期管理及相關技術經驗，例如用於回收、再利用和銷毀廢棄冷媒，及鋼瓶的管理。日本以符合所定之法規管制方式，並搭提高行動透明度的追蹤系統（包含測量、報告和驗證：MRV）作法，達成整體之冷媒生命周期管理制度。



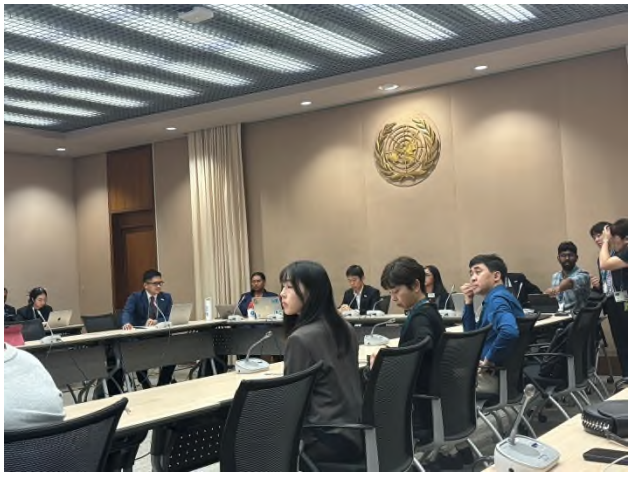


圖2，參加周邊會議辦理情形

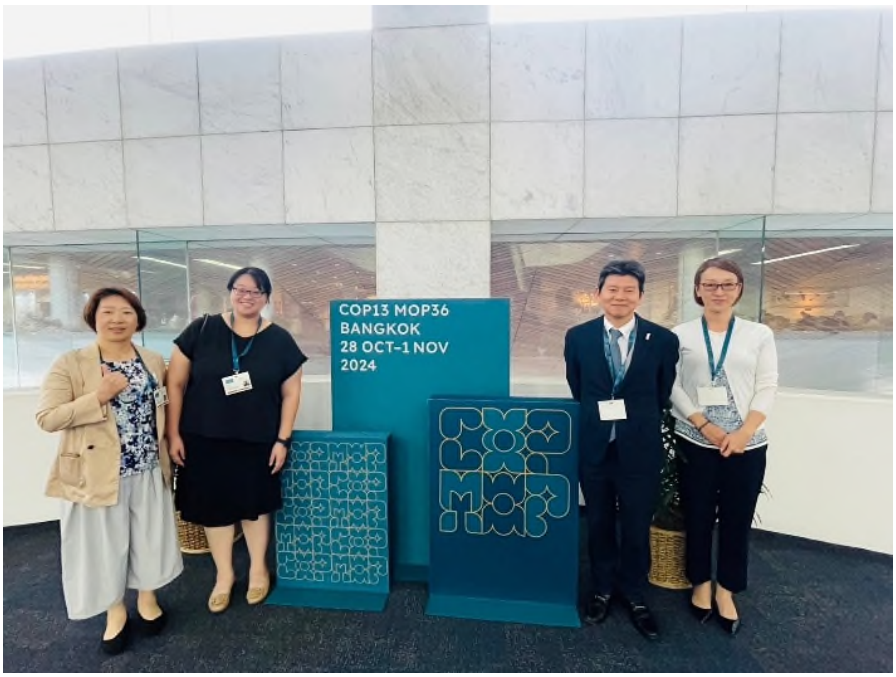
肆、重要議題國際交流情形

本次 MOP 36 會議期間，我團特別針對吉佳利修正案所管制之 HFC 使用於半導體製程之消費量認定、再生冷媒管理以及冷媒銷毀技術等議題，分別與日本、韓國、泰國及美國等各締約方代表，以及 TEAP 專家進行資訊交流。各議題交流內容與成果如下：

一、 半導體製程使用 HFCs 之消費量認定

我國半導體產業分別向日本、美國與中國進口 HFCs 以作為蝕刻製程之用，其中，近 6 成來自日本。惟製程中使用的 HFCs 是否可認定為原物用途而免納入消費量計算一事，經本次會議與 TEAP 委員江里口 武（Mr. Takeshi Eriguchi，日本籍）交流，其表示目前 TEAP 報告中所指半導體製程之 HFC-23 排放源，包括 HFC-23 於製程使用過程中的排放量，以及其他 PFCs 之副產物 HFC-23 排放量。而因蒙特婁議定書並未將原料用途（feedstock）納入國家消費量計算，惟原料用途之定義未臻明確，經江里口 武諮詢日本經產省實務作法，日本目前所申報為原料用途之數據，僅將反應與遭破壞的數量（假設約86%）納入原料用途的數量申報，而鋼瓶殘留量與最終排放量（假設約10%）則仍納入該國消費量申報。

另因本次會議有關 HFC-23 的議題，主要專注於排放量的推估，TEAP 專家表示，雖然報告中也有提到部分國家將半導體製程使用歸於原料用途，部分國家沒有，但會議過程中，並未有任何締約方針對此項提出質疑或疑問，因此也還不會有後續的決議文件，目前由各締約方自行決定是否將半導體製程使用歸於原料用途，尚無各國共通之作法，需再視下一次 TEAP 報告進展及締約方會議是否會有締約方提出討論。



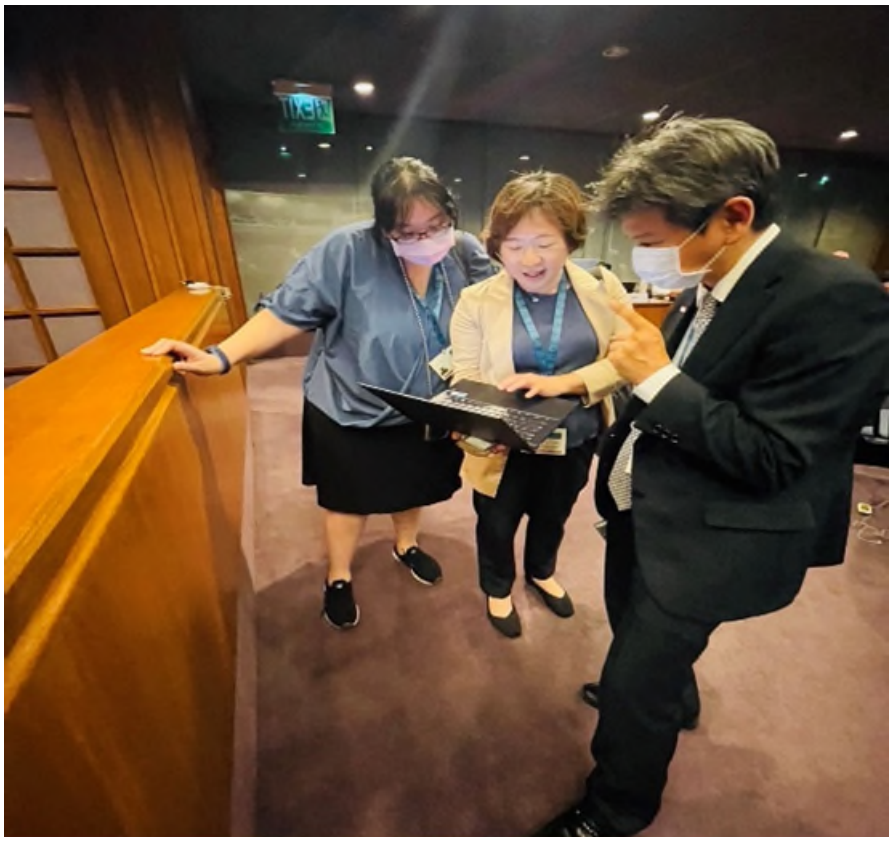


圖3、與TEAP委員江里口 武（Mr. Takeshi Eriguchi，日本籍，右一），討論半導體製程使用HFCs 之消費量認定

另本團考慮各締約方之產業特性，亦就本議題諮詢韓國代表，今年韓國政府機關未派員出席會議，但委託協助其研擬因應蒙特婁議定書與化武公約策略的單位：韓國石化公會（KPIA, Korea Petrochemical Industry Association）Ms. Mun Yeong Choi出席。該員表示，韓國目前亦規劃將半導體製程使用之 HFCs 列為原料用途，且計算其消費量基準量時，規劃不另納入生產或進口作為原料用途之 HFCs 數量。

本次會議中亦向美國環保署代表 Ms. Cindy Newberg 洽詢半導體製程之 HFC-23 排放應如何申報，其表示本次會議提案表格修訂是針對生產HFCs 等列管物質應申報其排放數據，因本國未有生產 HCFCs 或 HFCs 情形，作為半導體製程使用非屬此項，毋須申報此數據。

二、 冷媒回收之管理

日本已投入冷媒回收、再利用、再精製等相關作業，近年並持續拓展與東南亞國家合作，協助其建立冷媒回收與再利用程序。日本海外環境合作中心 (Overseas Environmental Cooperation Center, OECC) 於本屆會場展示小型冷媒回收設備與冷媒偵測器。此外，日本環境省、日本冷凍空調公會（JRAIA）、Climate and Clean Air Coalition (CCAC)、Initiative on Fluorocarbons Life Cycle Management (IFL)、OECC 等單位共同舉辦周邊會議，說明日本推動冷媒回收再利用流程。本團與 JRAIA 的 Mr. Koji Hatano、OECC 的 Mr. Makoto Kato 交流，表示日本係產業界及官方共同合作，以S＋3E的原則（安全、環境效益、能效、經濟可行）推動HFCs冷媒替代與回收再利用，202 2年已產生約 1200 公噸再精製冷媒（兩年內從 20% 提升至 35% ），惟其去化之管道尚未充分提升。

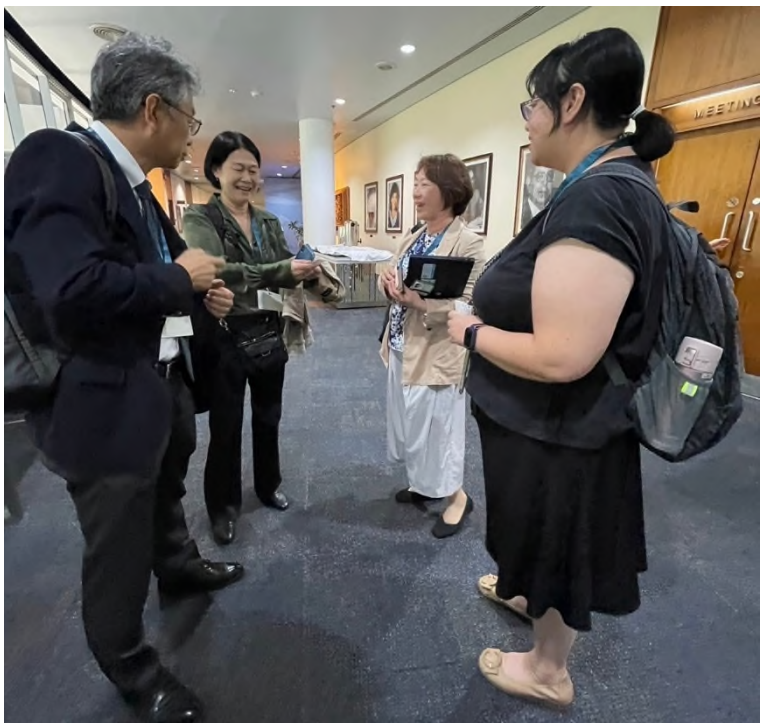


圖4、與JRAIA的Mr. Koji Hatano（左一），討論日本推動冷媒回收再利用流程

三、 冷媒銷毀實績交流

本團與協助泰國政府執行處理緝獲走私ODS銷毀計畫並取得自願減量碳額度之民間企業 Tradewater 的 Ms. Maria Gutierrez 與 Ms. Becky Romanovsky，以及泰國廢棄物管理公司 (WMS, Waste Management Siam Ltd.) 的 Mr. Prin Hanthanon 討論冷媒銷毀實務。其分享泰國目前處置冷媒的費用是一公斤約 60 元，且為執行自願減量專案計畫，需投入更多資金以進行第三方確查證工作，不符執行成本。

四、 其他蒙特婁議定書關注之相關議題

與前 TEAP 主席 Dr. Stephen O. Andersen（亦為前美國環保署官員）和我方交流蒙特婁議定書相關議題，其提出建議未來應關注兩點：

(一) 生產 HCFC-22 會產生副產物 HFC-23，若未來 HCFC-22

之市場需求減少，生產國家或僅進口的國家，HFC-23 消費量將持續增加，且生產國會銷毀 HCFC-22 而增加耗能，又會因減少銷毀高 GWP 值之 HFC-23 而可能增加供應過程之排放量，值得各國未來深入研究。

(二) 注意到家用空調設備安裝時太接近牆壁，造成熱氣排放不佳，影響設備的能效表現。因此，建議各國應研議設備離牆之適當距離。

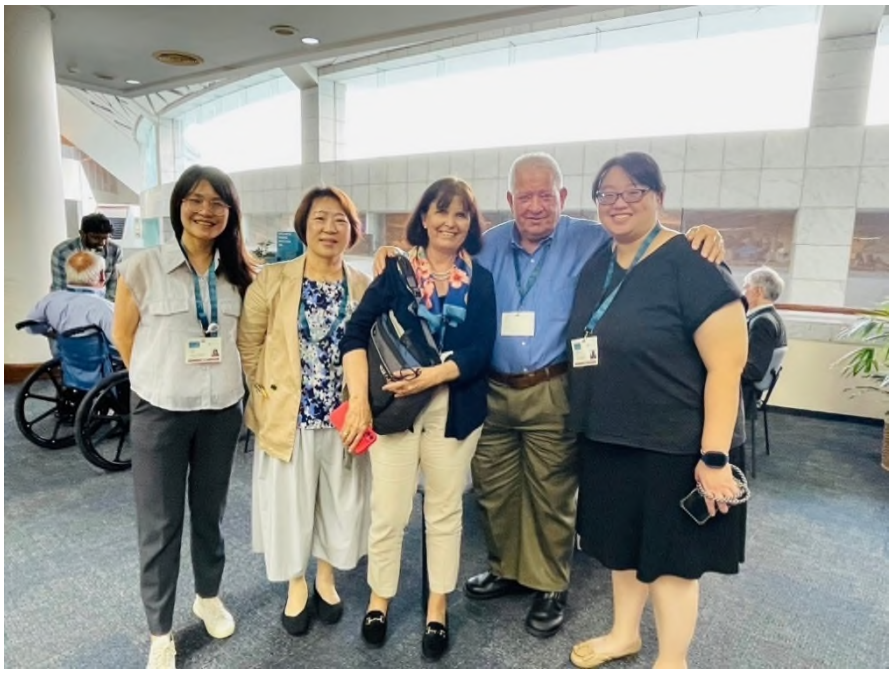


圖5、與前TEAP主席Dr. Stephen O. Andersen（右二）及TEAP共同主席Ms.Marta Pizano（中間）合影，討論蒙特婁議定書關注議題

表3、與國際專家交流紀錄

單位	與談人	討論內容
TEAP委員	Mr. Takeshi Eriguchi	半導體製程使用HFCs之消費量認定
韓國石化工會	Ms. Mun Yeong Choi	半導體製程使用

		HFCs 之消費量認定
美國代表	Ms. Cindy Newberg	半導體製程使用HFCs之申報方式
日本冷凍空調公會（JRAIA）	Mr. Koji Hatano	冷媒回收之管理
日本海外環境合作中心(Overseas Environmental Cooperation Center，OECC)	Mr. Makoto Kato	冷媒回收之管理
泰國民間企業Tradewater	Ms. Maria Gutierrez、Ms.Becky Romanovsky	冷媒銷毀實績交流
泰國廢棄物管理公司(WMS,Waste Management Siam Ltd.)	Mr. Prin Hanthanon	冷媒銷毀實績交流
TEAP前共同主席	Dr.Stephen O. Andersen	其他蒙特婁議定書關注之相關議題
TEAP共同主席	Ms. Marta Pizano	其他蒙特婁議定書關注之相關議題

伍、心得及建議

1. 本次為首次參與國際公約會議，進入大會議題討論時，大致上可區分為以美國為主的已開發國家一派，及以中國為主的開發中國家一派，分別代表進行各項議題的討論，其中，各議題又時常以已開發國家之資金來源，或是責任歸屬的問題而陷入癥

結，進而展開了後續漫長的聯絡小組會議討論。

2. 我國雖非蒙特婁議定書締約方，但歷來均遵循議定書之規範並提交相關數據，亦被視為締約方而得以締約國進行相關貿易往來，目前亦依公眾意見研處，辦理 HFCs 管理辦法草案之法制作業事宜，預估應可符合聯合國臭氧秘書處之規劃，於 2025 年 3 月 31 日前完成法規發布及配套措施建置。

3. 本次大會各方極為關注 TEAP 報告指出 HFC-23 的大氣觀測濃度顯著高於締約方申報數據情形，大會並決議加強全球對受控物質的大氣監測，特別是在未充分監測的地區，通過設置新監測站點和推動國際合作以提升監測能力。我國目前因尚未進行 HFCs 管制作業，現行亦無大氣觀測 HFCs 之機制，惟俟後續 HFCs 管理制度正式實施後，可參考溫室氣體之監測機制，研議我國之大氣觀測系統可行性，以掌握大氣中實際之排放情形。

4. 本次會議已與日本、韓國代表及 TEAP 委員確認，目前公約並未限制半導體產業製程使用之 HFCs 不得作為原料認定。又日本及韓國之相關法規及制度，均已將半導體產業製程使用之 HFCs 視為原料用途（惟各國採計方式及後續計算消費量方法仍有差異），因此，已參考日本及韓國兩國之制度，將消費量豁免計算申請由產業之主管機關協助作為原料認定的方式，擬定我國之 HFCs 管理制度，另基準量計算，考量目前公約已有之規範，以不另扣除作為原料使用之 HFCs ，符合公約一致性原則。

5. 本次大會中討論提到多項物質，均非屬於蒙特數議定書已列管物質，包含部分 HFCs 之同分異構物、極短壽命物質 (very short-lived substances, VSLS) 等，惟後續是否列入公約管理尚無定論，此項議題建議我國需持續蒐集相關訊息，並掌握國際最近動態以預為因應。

6. 蒙特婁議定書之管制架構為源頭削減（限制各國之生產量與進

出口量），但其最終目的為降低列管化學物質排放到大氣層中之濃度與數量，為避免因未能有效回收再利用而直接排放到大氣中，且降低列管化學物質供應不足之風險，日本與歐美等先進國家皆相當重視冷媒之回收再利用。惟本次與日本代表交流時，其亦表達雖已有相關冷媒回收、再利用、再精製之技術與流程，惟其去化亦尚未能顯著提升，與我國面對之瓶頸類似。

7. 另協助泰國政府執行處理緝獲走私 ODS 銷毀計畫之民間企業，目前已取得自願減量額度，後續如我國相關冷媒管制措施實施後，亦可能有部分業者為取得自願減量額度，而投入銷毀或回收之市場。建議可持續蒐集國際冷媒回收與再利用機制，並適時邀集國內冷凍空調廠商及公會共同商議，期能建立適合國內發展的冷媒回收再利用流程與作法。

8. 本次會議中，我團亦藉由工研院歷來參與締約方會議所累積的國際交流經驗，對於 HFCs 使用於半導體製程、冷媒的回收與銷毀等相關議題，分別與 TEAP 專家、韓國產業代表、美國、日本與泰國等各締約方代表討論並進行資訊交流，相關的國際交流情形除了作為我國後續研訂 HFCs 管制措施及冷媒管理等策略的重要參考來源外，亦各自保存了相關聯絡訊息，以建立未來諮詢或合作的聯繫管道。

9. 最後，身為一個有家中有 10 個月大男嬰及 3 歲女孩的職業媽媽，距離上一次因公出席國際會議竟已有 7 年之久，本次因應氣候變遷署後續承接了我國國內氫氟碳化物的管理業務，得以新增國際會議機會，出國前亦經主管提醒，作為機關代表，除了一個初次踏入相關國際性會議，亦是一場「學習之旅」。能順利完成本次國際會議行程，對於恪守工作崗位的各位主管、同仁，以及為這次國際會議盡力安排相關行程及會前提醒的外交部團隊、陪同出團的工研院同仁，還有為了讓我能獨自出國與會，所動員的各路親朋好友後援團，無盡感謝。

陸、附錄

附錄一、會議議程

附錄二、MOP 36會議紀錄報告

附錄三、MOP 36會議決議文件

附錄一

UNITED NATIONS

UNEP

UNEP/OzL.Conv.13/1
UNEP/OzL.Pro.36/1

Distr.: General
18 July 2024

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Vienna Convention for the Protection of the Ozone Layer

Montreal Protocol on Substances that Deplete the Ozone Layer

Thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer
Bangkok, 28 October–1 November 2024

Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer
Bangkok, 28 October–1 November 2024

Provisional agenda

I. Preparatory segment (28–30 October 2024)

1. Opening of the preparatory segment.
2. Organizational matters:
   (a) Adoption of the agenda of the preparatory segment;
   (b) Organization of work.
3. Financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol.
4. Montreal Protocol issues:
   (a) Consideration of the membership of Montreal Protocol bodies for 2025:
      (i) Membership of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol;
      (ii) Membership of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol;
      (iii) Co-chairs of the Open-ended Working Group;
   (b) Hydrofluorocarbon-23 (HFC-23) issues:
      (i) Emissions of HFC-23: reports by the Scientific Assessment Panel and the Technology and Economic Assessment Panel (decision XXXV/7, paras. 1 and 2);
      (ii) Potential changes to data reporting forms for reporting on HFC-23;
   (c) Life-cycle refrigerant management, including the outcomes of the workshop on life-cycle refrigerant management (decision XXXV/11);
   (d) Very short-lived substances;
   (e) Feedstock uses of controlled substances;
   (f) Enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol;
   (g) Climate-friendly alternatives for metered-dose inhalers;

(h) Future availability of halons and their alternatives;

(i) Possible compliance deferral for Article 5, group 2 parties: technology review by the Technology and Economic Assessment Panel;

(j) Strengthening Montreal Protocol institutions, including combating illegal trade;

(k) Energy efficiency issues:

(i) Unwanted imports of energy-inefficient products and equipment;

(ii) Strengthening the enabling environment to enhance energy efficiency in the cooling sector;

(l) Nominations for critical-use exemptions for methyl bromide for 2025;

(m) Changes in the membership of the Technology and Economic Assessment Panel;

(n) Compliance and data reporting issues: the work and recommendations of the Implementation Committee;

(o) Classification of the State of Palestine as a party operating under paragraph 1 of Article 5 of the Montreal Protocol and access to support from the Multilateral Fund;

(p) Status of ratification of the Kigali Amendment to the Montreal Protocol.

5. Vienna Convention issues:

(a) Report of the twelfth meeting of the Ozone Research Managers of the Parties to the Vienna Convention;

(b) Status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention.

6. Other matters.

II. High-level segment (31 October and 1 November 2024)

1. Opening of the high-level segment:

(a) Statement by the President of the twelfth meeting of the Conference of the Parties to the Vienna Convention;

(b) Statement by the President of the Thirty-Fifth Meeting of the Parties to the Montreal Protocol;

(c) Statement by a representative of the United Nations Environment Programme.

2. Organizational matters:

(a) Election of officers of the thirteenth meeting of the Conference of the Parties to the Vienna Convention;

(b) Election of officers of the Thirty-Sixth Meeting of the Parties to the Montreal Protocol;

(c) Adoption of the agenda of the high-level segment;

(d) Organization of work;

(e) Credentials of representatives.

3. Presentations by the assessment panels on the status of their work.

4. Report by the Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol on the work of the Executive Committee.

5. Statements by heads of delegation and discussion of key topics.

6. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol.

7. Dates and venues for the fourteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Seventh Meeting of the Parties to the Montreal Protocol.

8. Other matters.

9. Adoption of decisions by the Conference of the Parties to the Vienna Convention at its thirteenth meeting.

10. Adoption of decisions by the Thirty-Sixth Meeting of the Parties to the Montreal Protocol.

11. Adoption of the report of the thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol.

12. Closure of the meeting.

附錄二

UNITED NATIONS

UNEP

UNEP/OzL.Conv.13/8
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Vienna Convention for the Protection of the Ozone Layer

Montreal Protocol on Substances that Deplete the Ozone Layer

Thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer
Bangkok, 28 October–1 November 2024

Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer
Bangkok, 28 October–1 November 2024

Report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer

Introduction

1. The combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer was held at the United Nations Conference Centre, Bangkok, from 28 October to 1 November 2024.

2. The current report reflects the deliberations under the items included on the single agenda for the combined meetings; any references to the current meeting should be understood to denote the combined meetings of the two bodies.

Part one: preparatory segment (28–30 October 2024)

I. Opening of the preparatory segment

3. The preparatory segment was opened by its co-chairs, Miruza Mohamed (Maldives) and Ralph Brieskorn (Kingdom of the Netherlands), at 10.05 a.m. on Monday, 28 October 2024.

4. Opening remarks were delivered by Dechen Tsering, Regional Director and Representative for Asia and the Pacific and Director ad interim of the Climate Change Division of the United Nations Environment Programme (UNEP), and Megumi Seki, Executive Secretary of the Ozone Secretariat.

5. In her statement, Ms. Tsering hailed the Montreal Protocol as a symbol of unity through which global efforts had been harmonized to phase out ozone-depleting substances. The recovery of the ozone layer enabled protection from harmful ultraviolet radiation and the preservation of ecosystems and biodiversity, while the reduction of ultraviolet B radiation led to a decrease in ground-level ozone production, improving air quality and benefiting human health. The phasing out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) and the phasing down of hydrofluorocarbons (HFCs) also contributed towards climate change mitigation. All the parties that had not yet done so should ratify the Kigali Amendment to the Montreal Protocol, which could potentially avert up to 0.5 degrees Celsius of global warming by the end of the century. UNEP remained committed to facilitating a smooth transition for all towards HCFC and HFC alternatives

with low global warming potential (GWP), in a process that required unwavering commitment, technological innovation and financial support.

6. Access to cooling services was essential to protecting populations and the economy from escalating temperatures and to preserving food and medicine. Moreover, cooling-related actions contributed towards mitigating climate change, enhancing lives and generating economic benefits. All the parties should reinforce their national legislation and policy frameworks related to the Montreal Protocol and promote the adoption of ozone- and climate-friendly technologies, taking into account energy efficiency, the phasing out of HCFCs and the phasing down of HFCs. She encouraged all the parties to develop national cooling action plans for integration into their nationally determined contributions. UNEP was dedicated to promoting best practices and a global culture of refrigerant stewardship across the refrigeration and air-conditioning sectors, including through initiatives such as the Global Cooling Pledge and the Ozone Secretariat workshop on life-cycle refrigerant management. The Montreal Protocol had fostered the achievement of significant milestones, including the phase-out of over 99 per cent of ozone-depleting substances, which was testament to the power of ingenuity and cooperation. Collective wisdom and determination should be harnessed to ensure the success of the current meeting.

7. Welcoming participants to Bangkok, Ms. Seki proceeded to highlight and commend the outstanding work of the subsidiary bodies of the Vienna Convention and the Montreal Protocol, notably the preparatory work for the current meeting and its outcomes, which, she said, should serve to assist parties in developing concrete actions going forward. The Montreal Protocol and its Kigali Amendment provided hope for humankind through the efforts made under those instruments, contributing significantly to combating the growing planetary climate change crisis. Phasing down HFCs and increasing the efficiency and sustainability of cooling technology would generate major additional benefits in relation to the climate. The implementation of effective life-cycle refrigerant management measures through concerted action would also enable approximately 39 gigatonnes of carbon dioxide (CO_2)-equivalent emissions of HFCs and HCFCs in the cooling sector to be avoided in the next 25 years.

8. The major upcoming anniversaries of the Vienna Convention, the Montreal Protocol and the Kigali Amendment represented significant milestones and provided opportunities to highlight the tremendous achievements made under those instruments and their potential for further success. In that regard, universal ratification of the Kigali Amendment was crucial in order to reap its full benefits; that goal should be realized by its tenth anniversary in 2026.

II. Organizational matters

A. Attendance

9. The combined thirteenth meeting of the Conference of the Parties to the Vienna Convention and Thirty-Sixth Meeting of the Parties to the Montreal Protocol were attended by representatives of the following parties: Albania, Angola, Argentina, Armenia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belgium, Belize, Benin, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Burkina Faso, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Comoros, Cook Islands, Costa Rica, Cuba, Cyprus, Czechia, Democratic Republic of the Congo, Denmark, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Eswatini, Ethiopia, European Union, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands (Kingdom of the), New Zealand, Niger, Nigeria, North Macedonia, Norway, Oman, Pakistan, Palau, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russian Federation, Saint Vincent and the Grenadines, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Singapore, Slovakia, Somalia, South Africa, Spain, Sri Lanka, Sudan, Sweden, Switzerland, Tajikistan, Thailand, Timor-Leste, Trinidad and Tobago, Tunisia, Türkiye, Tuvalu, Uganda, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Yemen, Zambia and Zimbabwe.

10. Representatives of the following United Nations bodies and specialized agencies also attended: Food and Agriculture Organization of the United Nations, secretariat of the Multilateral Fund for the

Implementation of the Montreal Protocol, United Nations Development Programme, United Nations Environment Programme, United Nations Industrial Development Organization, World Bank and World Meteorological Organization. The Montreal Protocol assessment panels were also represented.

11. The following intergovernmental, non-governmental, industry, academic and other bodies were also represented: A-Gas International; A-Gas (Australia) Pty Limited; AGC Chemicals; Alliance for an Energy Efficient Economy; Alliance for Responsible Atmospheric Policy; Association des Distributeurs, Conditionneurs, Récupérateurs et Retraiteurs de Réfrigérants; ATMOsphere; Blue Star Limited; Carbon Containment Lab; Centre for Environment Justice and Development; Chemours Belgium BVBA; Children and Youth Major Group; Climate and Clean Air Coalition; ClimateWorks Foundation; Clinton Health Access Initiative; Collaborative Labeling and Appliance Standards Program; Council on Energy, Environment and Water; Daikin; Danfoss A/S (Denmark); Deutsche Gesellschaft für Internationale Zusammenarbeit; Environmental and Industrial Solutions Company; Environmental Investigation Agency; European Association of Refrigeration and Air Conditioning Installers; Fire Protection Industry (ODS and SGG) Board; Glencoe Strategies LLC; Global Policy Associates; Green TERRE Foundation; Guidehouse Germany GmbH; Gujarat Fluorochemicals Limited; Heating, Refrigeration and Air Conditioning Institute; ICF International; iFOREST; Industrial Technology Research Institute; Institute for Energy and Climate Strategies; Institute for Governance and Sustainable Development; International Energy Initiative; International Institute of Refrigeration; Leiden University; Japan Fluorocarbon Manufacturers Association; Korea Petrochemical Industry Association; Lawrence Berkeley National Laboratory; League of Arab States; Manitoba Ozone Protection Industry Association; MEBROM Corporation; Natural Resources Defense Council; New York University; Ökorecherche; Overseas Environmental Cooperation Centre; Peking University; Refrigerant Gas Manufacturers Association; Refrigerant Reclaim Australia; Refrigerants Australia; Refrigeration and Air Conditioning Manufacturers Association; Refrigeration and Air Conditioning Traders Association; Sequoia Climate Foundation; SilverLining; Solutions for Our Climate; SRADev; SRF Limited; Sustainability Analytics; Sustana Cooling Partners; Thai Samsung Electronics; The Carbon Trust; The Energy and Resources Institute; The Japan Refrigeration and Air Conditioning Industry Association; Tradewater; and Walton Hi Tech Industries Limited.

B. Adoption of the agenda of the preparatory segment

12. The following agenda for the preparatory segment was adopted on the basis of the provisional agenda set out in document UNEP/OzL.Conv.13/1–UNEP/OzL.Pro.36/1, section I, as amended:

1. Opening of the preparatory segment.
2. Organizational matters:
   (a) Adoption of the agenda of the preparatory segment;
   (b) Organization of work.
3. Financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol.
4. Montreal Protocol issues:
   (a) Consideration of the membership of Montreal Protocol bodies for 2025:
      (i) Membership of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol;
      (ii) Membership of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol;
      (iii) Co-chairs of the Open-ended Working Group;
   (b) Hydrofluorocarbon-23 (HFC-23) issues:
      (i) Emissions of HFC-23: reports by the Scientific Assessment Panel and the Technology and Economic Assessment Panel (decision XXXV/7, paras. 1 and 2);
      (ii) Potential changes to data reporting forms for reporting on HFC-23;
   (c) Life-cycle refrigerant management, including the outcomes of the workshop on life-cycle refrigerant management (decision XXXV/11);
   (d) Very short-lived substances;

(e) Feedstock uses of controlled substances;

(f) Enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol;

(g) Climate-friendly alternatives for metered-dose inhalers;

(h) Future availability of halons and their alternatives;

(i) Possible compliance deferral for Article 5, group 2 parties: technology review by the Technology and Economic Assessment Panel;

(j) Strengthening Montreal Protocol institutions, including combating illegal trade;

(k) Energy efficiency issues:

(i) Unwanted imports of energy-inefficient products and equipment;

(ii) Strengthening the enabling environment to enhance energy efficiency in the cooling sector;

(l) Nominations for critical-use exemptions for methyl bromide for 2025;

(m) Changes in the membership of the Technology and Economic Assessment Panel;

(n) Compliance and data reporting issues: the work and recommendations of the Implementation Committee;

(o) Status of ratification of the Kigali Amendment to the Montreal Protocol.

5. Vienna Convention issues:

(a) Report of the twelfth meeting of the Ozone Research Managers of the Parties to the Vienna Convention;

(b) Status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention.

6. Other matters.

13. Following a notification by the Secretariat to the parties that the State of Palestine had requested the postponement of consideration of item 4 (o) to the Thirty-Seventh Meeting of the Parties to the Montreal Protocol, the parties agreed to the suggestion by the Co-Chairs that the item be deleted from the provisional agenda of the current meeting and included in the provisional agenda for the forty-seventh meeting of the Open-ended Working Group of the Parties to the Montreal Protocol.

14. Under agenda item 6, “Other matters”, the parties agreed to the request by the representative of Egypt for a review of paragraph 17 of decision XXVIII/2 regarding the change in cut-off date for eligible capacity to be added to the agenda. In addition, following a request by the representative of Switzerland under agenda item 6, “Other matters”, the parties agreed that time for discussion of the information set out in document UNEP/OzL.Pro.36/INF/6 on HFC-245cb and other isomers not listed in Annex F to the Montreal Protocol would be included in the agenda.

C. Organization of work

15. The parties agreed to follow their customary procedure and to establish contact groups as necessary.

III. Financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol

16. In considering the item, the parties had before them paragraphs 10 to 22 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2). Those paragraphs summarized the information set out in the documents relevant to the financial reports and budgets of the two trust funds, namely the notes by the Secretariat on the proposed budgets for the triennium 2025–2027 of the trust fund for the Vienna Convention for the Protection of the Ozone Layer (UNEP/OzL.Conv.13/4) and the proposed budgets for 2025 and 2026 of the trust fund for the Montreal Protocol on Substances that Deplete the Ozone Layer (UNEP/OzL.Pro.36/4). In addition, the

Secretariat had also provided notes entitled "Proposed budgets for 2025 of the trust funds for the Vienna Convention for the Protection of Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer: fact sheets" (UNEP/OzL.Conv.13/INF/1–UNEP/OzL.Pro.36/INF/1) and "Financial report for the trust funds for the Vienna Convention for the Protection of Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer for the fiscal year 2023 (UNEP/OzL.Conv.13/5–UNEP/OzL.Pro.36/5). Those documents had been posted on the meeting portal three months prior to the meeting for review by the parties. At least two weeks before the start of the meeting, the Secretariat had provided an update on the budgets for the current year in the note entitled "Financial report for the trust funds for the Vienna Convention for the Protection of the Ozone Layer and for the Montreal Protocol on Substances that Deplete the Ozone Layer – Updated indicative financial report for the fiscal year 2024 as at 30 September 2024" (UNEP/OzL.Conv.13/INF/2–UNEP/OzL.Pro.36/INF/2). Draft decisions on the matter were set out in document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decisions XIII/[AA] and XXXVI/[AA]).

17. The parties agreed to follow their standard practice and established a budget committee to review the proposed budgets and the financial reports for the Vienna Convention and Montreal Protocol trust funds and to prepare draft decisions on financial matters for the Convention and the Protocol. It was decided that the committee's work would be facilitated by Sebastian Schnatz (Germany).

18. The Co-Chair noted that discussions under agenda item 4 (f) on enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol, and agenda item 5 (b) on the status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention could have an impact on the budget discussion. The Secretariat and the parties should therefore endeavour to ensure that the budget committee remained informed of developments in the discussions of those items.

19. Subsequently, Mr. Schnatz reported that the budget committee had been able to complete its work and had produced draft decisions on the financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol for consideration by the parties. The parties agreed to forward the draft decisions for further consideration and possible adoption during the high-level segment.

IV. Montreal Protocol issues

A. Consideration of the membership of Montreal Protocol bodies for 2025

1. Membership of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol

20. Introducing the sub-item, the Co-Chair said that the parties needed to decide on the membership of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol for 2025. Information on the positions to be filled was presented in paragraphs 23 to 26 of document UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2, and a draft decision on the matter was set out in section IV of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[BB]).

21. Subsequently, the representative of the Secretariat reported that, upon receipt of the nominations from the regional groups, a draft decision on the matter had been included in the compilation of decisions for the parties' consideration and possible adoption during the high-level segment.

2. Membership of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

22. Introducing the sub-item, the Co-Chair said that the parties needed to decide on the membership of the Executive Committee of the Multilateral Fund for 2025. Information on the positions to be filled was presented in paragraphs 27 to 30 of document UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2 and a draft decision on the matter was set out in section IV of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[CC]).

23. Subsequently, the representative of the Secretariat reported that, upon receipt of the names of the parties selected from the groups of parties operating under paragraph 1 of Article 5 of the Montreal Protocol (Article 5 parties) and parties not so operating (non-Article 5 parties), a draft decision on the matter had been included in the compilation of decisions for the parties' consideration and possible adoption during the high-level segment.

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

24. Introducing the sub-item, the Co-Chair said that the parties needed to decide on the Co-Chairs of the Open-ended Working Group for 2025. Information on the positions to be filled was presented in paragraphs 31 and 32 of document UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2 and a draft decision on the matter was set out in section IV of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[DD]).

25. Subsequently, the representative of the Secretariat reported that, upon receipt of the names of the persons selected by Article 5 parties and non-Article 5 parties, a draft decision on the matter had been included in the compilation of decisions for the parties' consideration and possible adoption during the high-level segment.

B. Hydrofluorocarbon-23 (HFC-23) issues

1. Emissions of HFC-23: reports by the Scientific Assessment Panel and the Technology and Economic Assessment Panel (decision XXXV/7, paras. 1 and 2)

26. In considering the sub-item, the parties had before them paragraphs 33 to 35 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), the report of the Scientific Assessment Panel entitled "Response to decision XXXV/7: emissions of HFC-23", the report of the Technology and Economic Assessment Panel entitled "Response to decision XXXV/7: emissions of HFC-23", and paragraphs 4 to 18 of and annexes I and II to the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2/Add.1– UNEP/OzL.Pro.36/2/Add.1).

27. Introducing the sub-item, the Co-Chair recalled that, in decision XXXV/7, the parties had requested the Scientific Assessment Panel to provide an update on HFC-23 emissions into the atmosphere and atmospheric concentrations to supplement the information in the 2022 quadrennial assessment, and had requested the Technology and Economic Assessment Panel to provide information regarding the quantity of HFC-23 being consumed, by country and by sector, as well as updated estimates on the amounts of HFC-23 generated at and emissions from HCFC-22 production facilities.

28. In the same decision, parties with available relevant scientific or technical information that might help inform the reports of the panels were invited to provide that information to the Secretariat by 1 March 2024. The Secretariat had not received any such information from parties.

29. The Scientific Assessment Panel and the Technology and Economic Assessment Panel had coordinated their work on the matter and had each produced a report. A summary of the reports was available in the addendum to the note by the Secretariat and the full reports had been made available on the meeting portal.

30. Stephen Montzka, a member of the Scientific Assessment Panel, and Helen Tope, Co-Chair of the Medical and Chemicals Technical Options Committee, speaking on behalf of the Technology and Economic Assessment Panel, delivered presentations on the response of each panel to the requests in decision XXXV/7. The presentations are set out in sections A and B, respectively, of annex I to the current report.

31. In the ensuing discussion, all the representatives who took the floor expressed appreciation for the panels' reports and presentations. Mr. Montzka first answered questions on behalf of the Scientific Assessment Panel. In response to a request for clarification on the relationship between atmospheric concentrations and emissions of HFC-23, he explained that, although the atmospheric concentrations of HFC-23 would increase as emissions of HFC-23 increased, there would not be a corresponding decrease in atmospheric concentrations as emissions decreased because HFC-23 had an atmospheric lifetime of 200 years. There was therefore a disconnect between emissions and concentrations. He agreed with the suggestion of another representative that it would be prudent to reassess the GWP of substances containing HFC-23, given the long atmospheric life of HFC-23.

32. In response to a question regarding global emissions estimated from measured atmospheric abundances, he clarified that, although it had been stated in the *Scientific Assessment of Ozone Depletion: 2022* that the Panel expected to see such emissions increases rise, the fact that the Panel had reported an increase that was 6 per cent lower than that observed between 2016 and 2020 in its latest report was due to the fact that it had used information from 2021 and 2022 that had not been

available when compiling the 2022 scientific assessment. Regarding a question on methodologies for deriving global emissions, he said that they were based on measurements in the remote atmosphere and the ways in which the concentration of a chemical changed over time, as well as the chemical's atmospheric lifetime. Furthermore, he noted that the methodologies had been explained in previous scientific assessments of ozone depletion and that the latest report contained information regarding the ways in which emissions were derived from atmospheric concentration measurements, at both the global and the regional levels. On questions relating to incomplete regional data, he said that he was aware of the intention of one HCFC-22-producing party, namely the United States of America, to provide estimates of HFC-23 emissions, although those estimates would be constrained by the atmospheric observations, within the next year and certainly in time for the next scientific assessment of ozone depletion.

33. Responding to a query regarding the impact of the production of HFC-23 on the atmosphere from reactions that oxidized fluorinated gases presented in the atmosphere, he clarified that such reactions accounted for a maximum of 3 per cent of HFC-23 production and that the actual percentage was likely to be lower. They should not therefore have affected atmospheric derived estimates or associated reporting during the relevant periods of the clean development mechanism of the Kyoto Protocol to the United Nations Framework Convention on Climate Change or of the Kigali Amendment.

34. Regarding a query relating to the appearance of the significant gap between the bottom-up and top-down estimates between 2014 and 2015, he said that although reports of destruction of HFC-23 had been received for the same time frame, no causal link between the two events had been established and so they could only be said to be coincidental. Regarding a query from the same party regarding any other potential sources of HFC-23 emissions, he said that the discrepancies in expected emissions and atmospherically derived estimates were far beyond those that could be explained by uncertainties in estimation.

35. In response to a query about the significant range in the estimation of the percentage of unexplained HFC-23 emissions that originated from China, he explained that the emissions estimates from different regions of China could not be combined. The estimate for the northern region of China accounted for 20 per cent, while that for the eastern region of China was 30 to 50 per cent of total global emissions of HFC-23 in recent years. He noted, furthermore, that many additional measurements of fluorinated chemicals had been introduced recently in China, which would allow the range of estimation to be reduced significantly in the future.

36. Ms. Tope answered questions on behalf of the Technology and Economic Assessment Panel. In response to a question regarding the generation rate of HFC-23, which appeared to be far higher than that required by parties for use as feedstock or for consumption, she said that the Panel provided a range of estimates based on the generation of HFC-23 from HCFC-22 using Intergovernmental Panel on Climate Change (IPCC) factors, which ranged between 1.5 and 3 per cent, and had also calculated a generation rate of 2.4 per cent, which had been calculated by the Technology and Economic Assessment Panel on the basis of generation data provided by parties. Regarding a request for more detail regarding the difference between the HFC-23 emissions estimates of the two panels, she clarified that the Technology and Economic Assessment Panel could only provide a total figure and was not in a position to provide disaggregated data, as data at the country level were confidential, and could not therefore provide the detailed explanation requested.

37. Responding to a request for the coefficient used for the calculation of HFC-23 emissions from HCFC-22 production, she said that the coefficient used by the Panel was 0.07 per cent, which had been calculated on the basis of 836 tons of HFC-23 emissions, as reported by parties, and 1.2 million tons of HCFC-22 production. She further clarified that the HFC-23 emissions presented in the report included not only the data reported by parties under Article 7 but also estimations prepared by the Panel on the basis of other sources. She also drew attention to a recent paper from a well-operated HCFC-22 and polymer plant in which the coefficient for that plant had been reported as being 0.19 per cent.

38. In response to a question regarding the gap in emissions estimates, she explained that the Panel used a combination of reported data and its own estimates, which were often related to relatively small sources. She further explained that the Panel often had to include a large range in its estimates owing to the lack of information available to it. In response to a query relating to the appearance of the significant gap between the bottom-up and top-down estimates between 2014 and 2015, in particular, she said that, as far as the Panel was aware, there had been no new source of production at that point that would have emitted HFC-23. Responding to another question from the same party, she said that the Panel was not aware of any significant sources of HFC-23 other than HCFC-22 production.

39. In response to a request for clarification regarding the sector-specific HFC-23 consumption, she said that total consumption was around 1,000 tons and further explained that, although just three sectors were involved, it was possible to provide information by sector only where such information was publicly available, as was the case for the electrical and semiconductor manufacturing sector. As that sector accounted for 720 tons, the remaining 280 tons were consumed by the fire suppression and very low temperature refrigeration sectors.

40. Responding to a question on the large range of the estimation of emissions from plant waste and product streams for 2022, she explained that, in addition to emissions from the main process vents, where abatement was typically employed, HFC-23 could also leave a plant in various co-products and waste streams, as had been stated by the Panel in its report for 2023 and in annex I of its latest report. As the extent to which the HFC-23 content of waste streams had been included in reporting by parties was unclear to the panel, and as the level of mitigation was also unclear, the Panel had calculated estimated emissions with the large range of 10–1,000 tons.

41. The representative of China said that, as her country was the largest global producer of HCFC-22 and other fluorinated chemicals, it was to be expected that the country would have the highest generation levels of HFC-23 and relatively higher HFC emissions. It was, however, regrettable that the report and presentation of the Scientific Assessment Panel contained assessments and subjective assumptions that were not appropriate for a scientific body, for example through the implied link between the volume and timing of HFC-23 destruction reported by China and the gap between global atmospheric monitoring data and reported data. There was also an implication that the global data discrepancy had been knowingly caused by China through the withholding of information. China was concerned that representatives of parties attending the current meeting, who were not scientists, would draw unwarranted conclusions from the information presented to them and therefore urged the Scientific Assessment Panel and the other scientific bodies under the Protocol to maintain their scientific authority by refraining from making premature statements or implications, and by investigating the gap in emissions estimates in all HFC-23-producing parties, not just in China. Furthermore, she recalled that there remained significant gaps in scientific knowledge regarding HFC-23 emissions estimation at the global level, as well as significant annual fluctuations in reported HFC-23 emissions data.

42. Mr. Montzka responded to further questions that had been addressed to the Scientific Assessment Panel. In response to questions regarding the warming forcing of HFCs and the gap in emissions estimates, he confirmed that HFC-23 accounted for approximately 15 per cent of the total warming forcing of all HFCs, and that the emissions gap in 2022 had been between 10.5 and 12.5 kilotons (kt), which was less than it had been previously but still accounted for 170 million metric tons of CO_2 equivalent. Atmospheric oxidation was less than 0.4 kt and the Panel should be able to provide a specific range for atmospheric oxidation in the near future.

43. Responding to the concerns raised by the representative of China, he stressed that the focus on the country had been purely due to the fact that it was the largest global producer of HCFC-22 and other fluorinated chemicals. He recalled that both panels had coordinated their work to compare and contrast the available reporting information and that there was a clear gap in their understanding of HFC-23 emissions. He also noted that the Scientific Assessment Panel had assessed the gap using comparable methodologies for several regions of the world, and he reiterated that the focus on China in that regard had been solely due to the size of its HCFC-22 industry. Although evidence indicated that there had been persistent gaps in emissions since 2015, that was not meant in any way to imply that reporting by China had been inaccurate for its intended use. The Panel looked forward to further discussions with China and other parties to further its understanding of the issues.

44. Ms. Tope answered further questions on behalf of the Technology and Economic Assessment Panel. Responding to a query regarding the sizeable percentage of HFC-23 emissions that were unaccounted for, she confirmed that, on the basis of the difference between the reported and estimated amounts calculated by the Technology and Economic Assessment Panel and the estimates of the Scientific Assessment Panel, HFC-23 emissions that were unaccounted for totalled between 75 and 80 per cent.

45. On a question regarding the volume of HFC-23 produced intentionally rather than as a by-product, she said that although the total amount of HFC-23 produced in 2022, as reported by parties, had been around 7,000 tons, that total might have included HFC-23 by-product that had subsequently been earmarked for production.

46. In response to a question regarding the processes that could be of significant enough volume to explain the gap in HFC-23 emissions, she drew attention to the annex to the Panel's report, recalling that the production of HCFC-22 was the major pathway for the generation of HFC-23, accounting for

95 per cent of such generation from chemical production. The remaining 5 per cent of HFC-23 generation was a result of the production of Annex C substances other than HCFC-22 (1 per cent), Annex F substances (1 per cent), and tetrafluoroethylene and hexafluoropropylene (between 3 and 4 per cent). Although there were no gaps in the understanding of the Panel in terms of the relative importance of substances as sources of HFC-23 emissions, there were gaps in its understanding on the basis of the Article 7 data reported.

47. Responding to a request for disaggregated information regarding global HCFC-22 production, she said that, although she could not provide such information as it was confidential, she could provide the total figure for Article 5 parties, which was approximately 990,000 tons, representing the largest proportion of the global HCFC-22 production of 1.2 million tons.

48. In response to a question regarding additional activities that the Technology and Economic Assessment Panel could carry out to understand the data and associated uncertainties, she drew attention to the uncertainties presented in table 4.1 of the Panel's report and the discussion in the report of uncertainties in relation to data submitted under Article 7. The Panel had estimated HFC-23 generation emissions on the basis of information from industry experts with a knowledge of specific plants but, as that information was typically confidential, the Panel could not use it to inform the estimation of emission rates and was therefore only in a position to apply generalized emissions rates. The estimates could therefore be improved if specific data were provided by parties that could be used to narrow the range of estimates and she strongly encouraged parties to submit such data, in particular in relation to the manufacture of tetrafluoroethylene and hexafluoropropylene, HCFC-22 plant waste and product stream emissions, and the manufacture of semiconductors.

49. Finally, responding to a query regarding emission factors, she confirmed that the Technology and Economic Assessment Panel did not use the IPCC default emission factor for fluorochemical production of 4 per cent, as that did not take account of abatement.

50. Several representatives expressed the view that the issue of HFC-23 emissions needed to be addressed urgently and that all parties should work together to achieve that aim, for example by using abatement technology, ensuring good monitoring coverage for all regions, considering ways of reducing the use of HFC-23 still further, and sharing relevant existing monitoring data. A number of representatives urged all parties that produced HFC-23 to provide information as to whether the HFC-23 was used, emitted or destroyed and one representative said that, in view of the large range of estimates currently applied by the scientific panels, it was incumbent upon parties to investigate any evident inconsistencies or large differences between emissions derived from reporting and those derived from atmospheric monitoring. One representative recalled the importance of parties being as impartial and scientific as possible in their approach to solving the issue of HFC-23 emissions.

51. One representative of an observer, drawing attention to the dangerously high levels of HFC-23 emissions globally in the midst of a climate crisis, expressed her disappointment that no parties had responded to the request of the Secretariat to submit additional information. She encouraged parties to make more extensive use of abatement technologies, which were available at relatively low cost and were an easy way of mitigating HFC-23 emissions. She also noted that the lack of data regarding HFC-23 emissions levels was significantly hampering the ability of the Technology and Economic Assessment Panel to make bottom-up emissions estimates, and that was an example of the critical need to improve monitoring, reporting and verification under the Protocol. Parties should therefore demand transparency from producers of fluoropolymers and HCFC-22; full information from countries with such production; the establishment of clear guidelines for measuring, controlling and reporting HFC-23 emissions; the development of an auditing framework for fluoropolymer production; and concerted and urgent efforts from all parties to eliminate the use of HFC-23 in all emissive applications.

52. Later in the meeting, the representative of the United States, speaking also on behalf of Canada, introduced a proposal for a draft decision, set out in a conference room paper, which was designed to address concerns over the substantial discrepancies between the measured atmospheric abundances of HFC-23 and reported emissions.

53. The draft decision included requests to parties to share HFC-23 monitoring data with international monitoring networks and to update their own data reporting; to remind parties manufacturing HCFCs or HFCs of their obligation to ensure that HFC-23 emissions from relevant production facilities were destroyed; to request parties with substantial differences between reported emissions and emissions estimates derived from atmospheric monitoring to undertake actions to implement their HFC-23 emissions obligations, to investigate the potential reasons for the deviations and to submit information to the Secretariat; to request parties producing HCFC-22 to submit information to the Secretariat on the methodology used to estimate their HFC-23 emissions; to request

the Scientific Assessment Panel to update its September 2024 report on atmospheric concentrations of HFC-23; to request the Technology and Economic Assessment Panel to provide estimates of emissions of HFC-23 from facilities that intentionally produced HFC-23, and an assessment of market supply and demand for HFC-23, and also to provide information on the verification guidelines used under the Clean Development Mechanism for HFC-23 destruction projects; and to request the Technology and Economic Assessment Panel and the Scientific Assessment Panel to further clarify the possible reasons for the discrepancy between atmospheric monitoring estimates and emissions of HFC-23 reported by parties.

54. He expressed the view that some of those requests for information could be met in time for the forty-seventh meeting of the Open-ended Working Group, while others would need more time, and could be met in time for the Thirty-Seventh Meeting of the Parties.

55. The representative of China introduced a proposal for a draft decision, as set out in a conference room paper. He explained that since the reasons behind the gap between observed and reported emissions remained unclear, the decision called for collaborative research between parties' research institutions to study emission mechanisms, including from known and unknown sources. The draft decision also invited parties to share their practices in collecting and reporting data on HFC-23 emissions and requested the Secretariat to establish an expert task force to research and develop technical guidelines for accounting for and reporting such emissions. It also invited parties to share their best practices and technical information, in order to assist other parties in implementing HFC-23 by-product reduction practices based on their national circumstances.

56. Another representative of China observed that both proposals for draft decisions expressed the same concerns over the uncertainty surrounding HFC-23 emissions, and both sought to clarify them. However, it should be evident to parties that the proposal of China was more objective and science-based, while also more fully respecting the differences in capacity of different parties. The proposal from Canada and the United States lacked adequate consideration of the weaknesses in scientific research and capacity, including parties' difficulties in reporting emissions accurately, that underlay much of the uncertainty behind the discrepancies. In practice it would be very challenging for either the assessment panels or parties to provide more accurate reporting of emissions unless further research had been conducted and greater technical capacity developed.

57. The draft decision from Canada and the United States also proposed, in a simplistic and reckless manner, additional requirements beyond the obligations of the Montreal Protocol. If parties were to undertake additional actions, it should be in response to an invitation from the parties, rather than a request, which implied a mandatory requirement. The proposal also showed distrust by framing what was a global issue as a problem for one country, namely China. The implication that parties generating HFC-23 emissions had not taken the measures necessary to fulfil their obligations under the Montreal Protocol was unfounded and unjust; it was contrary to the spirit of mutual trust and unity which had characterized work under the Protocol so far. In conclusion, she expressed the view that elements from each proposal could be combined into a single draft decision, but only if it avoided any description or request targeting or disrespecting specific parties and only if it took into account consideration of parties' different capacities.

58. All the representatives who spoke thanked the proponents of the two draft decisions for putting them forward and observed that they shared several common elements which they would like to discuss further. One representative said that the focus of the final draft decision should be on seeking additional information from the assessment panels on the reasons for the differences in estimates of emissions, including on uncertainties in Article 7 data reporting. She expressed concern over some of the elements in the proposal from Canada and the United States, including an assessment of the need for intentional production, and analysis of the Clean Development Mechanism guidelines, which, she said, was not relevant.

59. Responding to the comments, the representative of the United States thanked representatives for their interventions. He explained that he had not intended the word "request", which was a common term used in many decisions of the meetings of the parties, to imply any mandatory requirement. The draft decision was also not intended to refer to any obligations additional to those already existing under the Montreal Protocol, or to parties' status of compliance or non-compliance. The reference to China was simply drawn from one of the studies cited by the Scientific Assessment Panel, on estimates of regional emissions of HFC-23 derived for eastern China. He agreed that the problem was a global issue and explained that his party had approached the issue with the intent of showing mutual respect for every party. He agreed that there was common ground between the two draft decisions, and that both had a common goal in mind: to reduce emissions of HFC-23, a substance with a GWP of 140,000, from their existing levels of about 10,000 tonnes a year.

60. The parties agreed to establish a contact group, co-chaired by Paul Krajnik (Austria) and Shontelle Wellington (Barbados), to discuss both proposals for draft decisions.

61. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a single draft decision on emissions of HFC-23, for consideration by the parties.

62. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

2. Potential changes to data reporting forms for reporting on HFC-23

63. In considering the sub-item, the parties had before them paragraphs 36 and 37 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), a note by the Secretariat on potential changes to reporting form 3 (paragraph 3 of decision XXXV/7) (UNEP/OzL.Pro.WG.1/46/3), and paragraphs 194 to 200 of the report of the forty-sixth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (UNEP/OzL.Pro.WG.1/46/5).

64. The Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, the Secretariat had presented, for consideration by the parties, options for potential changes to reporting form 3, specifically concerning the generation and destruction of HFC-23, and HFC-23 held as stocks. In discussing the matter, some parties had expressed an interest in looking into the issue of HFC-23 destruction not only in reporting form 3, but also in forms 4 and 6. At the conclusion of discussions, one representative had offered to prepare a proposal on the matter to serve as a basis for further discussion by the Thirty-Sixth Meeting of the Parties.

65. The representative of the United States introduced a proposed draft decision set out in a conference room paper. She said that the proposal related to revisions to data reporting forms with respect to Annex F, Group II, substances and included the following elements: the renaming of data form 3; revisions to form 6, which was the only data form unique to HFC-23; and revisions to the data reporting instructions and guidelines. The aim was for the production of substances controlled under the Montreal Protocol to be reported in the same way for all substances.

66. In the ensuing discussion, one representative said that, as in the Montreal Protocol itself, there should be a distinction between the production and the unintentional generation of HFC-23. The reporting of stocks that were held with a view to being destroyed should also be addressed. Another representative stated that the issue of HFC-23 was very complicated and, in revising data reporting forms, parties should strive to make them more science-based and adapted to the compliance obligations of the Protocol. The reporting burden on parties was very heavy, and revisions should bring simplifications to the forms, thereby avoiding the repetitive cross-reporting of data. Furthermore, as the parties' understanding of HFC-23 remained limited, more research and a standardized methodology for calculating emissions were required.

67. The parties agreed to establish a contact group, co-chaired by Martijn Hildebrand (Kingdom of the Netherlands) and Obed Meringo Baloyi (South Africa), to discuss further the proposal by the United States.

68. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on revised data reporting forms, for consideration by the parties.

69. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

C. Life-cycle refrigerant management, including the outcomes of the workshop on life-cycle refrigerant management (decision XXXV/11)

70. In considering the item, the parties had before them paragraphs 38 to 40 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), the report of the Technology and Economic Assessment Panel entitled "Decision XXXV/11 Task Force Report on Life-cycle Refrigerant Management", the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1, annex I), paragraphs 52 to 69 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5) and

the note by the Secretariat entitled “Concept note and provisional programme” (UNEP/OzL.Pro/Workshop.13/1).

71. Introducing the item, the Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, representatives had reviewed the report of the task force on life-cycle refrigerant management established by the Technology and Economic Assessment Panel in response to the request set out in paragraph 1 of decision XXXV/11. In accordance with the request set out in paragraph 4 of the decision, the Secretariat had convened a one-day workshop on 27 October 2024, and the summary of the outcomes of the workshop, largely based on the key takeaway messages identified by participants, was now available on the meeting portal.

72. All the representatives who took the floor thanked the Secretariat for organizing the workshop, and the facilitators, presenters and resource experts for their contributions. The event had proved immensely valuable in advancing discussions on the vital issue of life-cycle refrigerant management. Preventing the leakage of refrigerants and encouraging their recovery, reuse and recycling would reduce the demand for volumes of new substances, and this, together with the destruction of used refrigerants, would help to combat ozone depletion and climate change. Many representatives said that they would like to continue the discussions in order to clarify and further explore the issues raised, and prioritize actions, including, potentially, at a future workshop.

73. Several representatives drew attention to the need for additional support for Article 5 parties. Such support included strengthening the servicing sector through training, providing small workshop technicians with recovery and recycling equipment at subsidized rates, introducing the certification of technicians, providing incentives for best practices, supplying gas analysers at reasonable prices, providing support for compiling inventories of banks of substances and equipment, and capacity-building and technology transfer for leakage prevention and detection and refrigerant recovery and for collection, transport and disposal. One representative expressed the hope that the next replenishment of the Multilateral Fund would take those issues into account. Another representative highlighted the additional problems faced by low-volume-consuming countries, particularly those that were geographically widely dispersed.

74. One representative observed that, as the phase-out and phase-down of controlled substances progressed, the disposal of huge volumes of end-of-life equipment and substances would prove an increasingly urgent challenge, including in terms of financing needs for collection and disposal. He expressed the hope that this topic could be discussed further. Another representative suggested that Governments would probably need to introduce extended producer responsibility solutions involving both producers and end users.

75. Representatives also raised the question of the interaction of the Montreal Protocol with other multilateral environmental agreements, especially the Paris Agreement on climate change and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. That included the issue of classifying recovered substances in compliance with the provisions of the Basel Convention.

76. Introducing a proposal for a draft decision, set out in a conference room paper, the representative of the Federated States of Micronesia suggested that the opportunity existed to make the Montreal Protocol into the greatest treaty of all time if the world faced up to the challenge of arresting the substantial growth in demand for refrigerants for refrigerators and air conditioners stemming from the combination of the growing need for cooling and economic development, and the enormous volumes of waste that would follow. Building on the foundations laid by decision XXXV/11, the draft decision requested the Technology and Economic Assessment Panel to provide further information on resources, challenges, stakeholder engagement, data gathering and use, and opportunities for regional approaches; invited the Executive Committee and the secretariat of the Multilateral Fund to consider ways of enhancing life-cycle refrigerant management in project preparation and implementation; requested the Ozone Secretariat to compile an online library of resources; and encouraged parties that had begun compiling inventories and plans to consider including additional activities and to use their regional networks to explore cooperative approaches.

77. The parties agreed to establish a contact group, co-chaired by Morgan Simpson (United Kingdom) and Osvaldo Álvarez-Pérez (Chile), to discuss further the issues raised.

78. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on life-cycle refrigerant management, for consideration by the parties.

79. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

D. Very short-lived substances

80. In considering the item, the parties had before them paragraphs 41 to 46 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), section 5.2 of volume 1 of the May 2024 progress report of the Technology and Economic Assessment Panel, paragraphs 5 to 18 of the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1) and paragraphs 28 to 37 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3– UNEP/OzL.Pro.36/3 (draft decision XXXVI/[A]).

81. The Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, the parties had considered the response of the Technology and Economic Assessment Panel to decision XXXV/6 on very short-lived substances as prepared by its Medical and Chemicals Technical Options Committee in cooperation with the Scientific Assessment Panel. Following initial discussions on the matter by the parties, Australia, Canada, the European Union and Switzerland had put forward a draft decision requesting the Technology and Economic Assessment Panel, in cooperation with the Scientific Assessment Panel, to provide additional information on very short-lived substances. The draft decision had been discussed in a contact group, which had revised the text but had been unable to conclude its work.

82. The parties agreed to establish a contact group, co-chaired by Juan José Galeano (Argentina) and Heidi Stockhaus (Germany), to resume discussions on the matter.

83. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on additional information on very short-lived substances, for consideration by the parties.

84. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

E. Feedstock uses of controlled substances

85. In considering the item, the parties had before them paragraphs 47 to 52 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2); paragraphs 19 to 37 of the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1); volume 1 of the report of the Technology and Economic Assessment Panel of May 2024 (section 5.3); and paragraphs 38 to 51 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[B]).

86. The Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, the representative of Australia, speaking also on behalf of Canada, Norway and Switzerland, had introduced a draft decision on feedstock uses of controlled substances, as set out in a conference room paper, which had been revised in an informal group before being forwarded to the current meeting for further consideration.

87. The parties agreed to establish a contact group, co-chaired by Michel Gauvin (Canada) and Leslie Smith (Grenada), to discuss the revised draft decision further.

88. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on feedstock uses of controlled substances, for consideration by the parties.

89. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

F. Enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol

90. In considering the item, the parties had before them paragraphs 53 to 58 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2); the document by the Secretariat entitled "Outcomes of the Workshop on Costs of Atmospheric Monitoring of Gases Controlled under the Montreal Protocol"; paragraphs 41 to 76 of, and annexes V and VI to, the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1); a note by the Secretariat on enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol: a report on potential funding sources and administrative issues (UNEP/OzL.Pro.WG.1/46/INF/4); and paragraphs 73 to 87 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[C]).

91. The Co-Chair recalled that the draft decision had been prepared by the representatives of Canada and the United States at the forty-sixth meeting of the Open-ended Working Group. It had been discussed in a contact group, but that contact group had been unable to review all the paragraphs of the draft decision. The partially revised draft decision had subsequently been forwarded to the current meeting for further consideration. The Co-Chair also drew attention to the fact that the issue under discussion was linked to the discussions under agenda item 3 on financial reports and budgets of the trust funds for the Vienna Convention and the Montreal Protocol and those under item 5 (b) on the status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention.

92. In the ensuing discussion, several representatives highlighted the need to ensure coherence with certain of the draft decisions to be discussed in relation to matters under the Vienna Convention. One of them explained that two draft decisions on Vienna Convention issues had been prepared by members of the Bureau of the Conference of the Parties to the Vienna Convention who had attended the twelfth meeting of the Ozone Research Managers. One draft decision related to the recommendations included in the report of that twelfth meeting and the other draft decision related to the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention. Those who spoke proposed that all the related issues, once raised under their specific agenda item, be considered by the same contact group.

93. The parties agreed to establish a contact group, co-chaired by Liana Ghahramnyan (Armenia) and Alessandro Peru (Italy), to discuss the revised draft decision further.

94. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol, for consideration by the parties.

95. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

G. Climate-friendly alternatives for metered-dose inhalers

96. In considering the item, the parties had before them paragraphs 59 to 64 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2); volume 1 of the report of the Technology and Economic Assessment Panel of May 2024 (section 5.9); annex II to the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1); and paragraphs 140 to 152 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[D]).

97. The Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, the representative of the European Union had introduced a proposal for a draft decision on measures to facilitate the transition to metered-dose inhalers with low-global-warming-potential propellants.

Following good progress in discussions in a contact group, the parties had agreed to forward the draft decision to the current meeting for further consideration.

98. The parties agreed to establish a contact group, co-chaired by Noe Megrelishvili (Georgia) and Henry Wöhrnschimmel (Switzerland), to discuss the draft decision further.

99. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on climate-friendly alternatives for metered-dose inhalers, for consideration by the parties.

100. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

H. Future availability of halons and their alternatives

101. In considering the item, the parties had before them paragraphs 65 to 69 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), chapter 3 of and annex 1 to volume 1 of the May 2024 progress report of the Technology and Economic Assessment Panel, paragraphs 116 to 118 of annex II to the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1) and paragraphs 153 to 157 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3– UNEP/OzL.Pro.36/3 (draft decision XXXVI/[E]).

102. The Co-Chair recalled that the matter had been included on the agenda of the forty-sixth meeting of the Open-ended Working Group because of the concerns expressed by a number of parties at the forty-fifth meeting of the Working Group and the Thirty-Fifth Meeting of the Parties about the long-term availability of halons and revisions to the predicted timelines for running out of halons. The situation had been described in the 2022 quadrennial assessment report and the 2022 progress report of the Fire Suppression Technical Options Committee of the Technology and Economic Assessment Panel. The 2024 progress report of the Panel had provided additional updates on those issues.

103. At the forty-sixth meeting of the Open-ended Working Group, the representative of Canada, speaking also on behalf of Australia and the United States, had introduced a proposal set out in a conference room paper for a draft decision on measures to support the sustainable management of recovered, recycled or reclaimed halons. After further discussion in a contact group, the Working Group had agreed to resume discussions at the current meeting on the basis of the draft decision, as revised by the contact group.

104. The parties agreed to establish a contact group, co-chaired by Ali Tumayhi (Saudi Arabia) and Andrew Clark (United States), to resume discussions on the matter.

105. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on measures to support the sustainable management of recovered, recycled or reclaimed halons, for consideration by the parties.

106. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

I. Possible compliance deferral for Article 5, group 2 parties: technology review by the Technology and Economic Assessment Panel

107. In considering the item, the parties had before them paragraphs 70 to 75 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), volume 1 of the report of the Technology and Economic Assessment Panel of May 2024 (chapter 8), paragraphs 119 to 129 of the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-sixth meeting (UNEP/OzL.Pro.WG.1/46/2/Add.1) and paragraphs 158 to 183 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[F]).

108. The Co-Chair recalled that the main concerns raised by parties during the discussions at the forty-sixth meeting of the Open-ended Working Group, on possible compliance deferral for Article 5, group 2 parties, had related to the limited availability of local data and the general lack of focus on the challenges faced by countries with high ambient temperatures and by Article 5, group 2 parties. Subsequently, the representative of India, speaking also on behalf of Bahrain, Kuwait, Qatar and Saudi Arabia, had presented a draft decision set out in a conference room paper. Following discussion of the draft decision in a contact group, the parties had agreed to forward the draft decision, as revised by the contact group, to the current meeting for further consideration.

109. The parties agreed to establish a contact group, co-chaired by Cornelius Rhein (European Union) and Ana Maria Kleymeyer (Federated States of Micronesia), to discuss the revised draft decision further.

110. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on the matter for consideration by the parties.

111. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

J. Strengthening Montreal Protocol institutions, including combating illegal trade

112. In considering the item, the parties had before them paragraphs 76 to 80 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2); a note by the Secretariat on the compilation of information provided by parties on illegal trade practices and approaches taken by national authorities to identify and address such cases (UNEP/OzL.Pro.WG.1/46/4); and paragraphs 184 to 192 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[G]).

113. The Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, following parties' consideration of a note by the Secretariat on the compilation of information provided by parties on illegal trade practices and approaches taken by national authorities to identify and address such cases, the representative of the European Union had introduced a draft decision outlining the next steps for further strengthening Montreal Protocol institutions. Following discussion of the matter in a contact group, the parties had agreed to forward the draft decision, as revised by the contact group, to the current meeting for further consideration. At that time, the representative of European Union had indicated that the party would submit a new version of the text for consideration at the current meeting to address the concerns expressed and the feedback given during the discussions in the contact group.

114. The representative of the European Union introduced a revised version of the draft decision, as set out in a conference room paper. The revised proposal aimed to clarify the request to the Secretariat relating to information on licensing systems; requested analysis by the Secretariat of the information submitted by parties; and sought to address concerns about the previously proposed expert meeting, making it clear that the aim was for parties to reflect, on the basis of various existing documents, on the functioning of the compliance mechanism and to identify issues for review by the parties. In addition, the European Union had included two new paragraphs that had been proposed in the contact group but had not yet been discussed.

115. In the ensuing discussion, some representatives thanked the representative of the European Union for his party's efforts to address the concerns raised at the forty-sixth meeting of the Open-ended Working Group. One expressed the view that consideration of the functioning of the compliance mechanism of the Montreal Protocol by a meeting of interested parties might prove too broad a concept, and its purpose might need to be clearer. Agreeing with the need to be constrained in the approach to organizing such a meeting, another representative welcomed the specific mention of the exchange being based on existing documents, as that would help in framing the exercise. The representatives expressed the desire to engage in further discussions on the proposed draft decision.

116. The parties agreed to establish a contact group, co-chaired by Jana Mašíčková (Czechia) and Fathmath Usra (Maldives), to discuss the revised draft decision further.

117. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision entitled “Further strengthening Montreal Protocol institutions: next steps”, for consideration by the parties.

118. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

K. Energy efficiency issues

1. Unwanted imports of energy-inefficient products and equipment

119. In considering the sub-item, the parties had before them paragraphs 81 to 84 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2) and paragraphs 213 to 219 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[H]).

120. Introducing the sub-item, the Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, Kyrgyzstan had introduced a draft decision set out in a conference room paper on avoiding unwanted imports of energy-inefficient products and equipment. The draft decision had invited parties to voluntarily inform the Secretariat if they did not consent to the import of such products and equipment into their territories, with the Secretariat maintaining and updating annually a list of those parties.

121. A contact group had been established to discuss the proposal. While good progress had been made on reviewing the draft decision, there had been insufficient time to finalize it. The Working Group had therefore agreed to forward the draft decision, as revised by the contact group, to the current meeting for further consideration; it was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[H]).

122. The parties agreed to establish a contact group, co-chaired by Morane Godfrin (France) and Baba Dramé (Senegal), to resume discussions on the matter.

123. Subsequently, the representative of Kyrgyzstan introduced a revised version of the draft decision, as set out in a conference room paper. It had been prepared on the basis of the discussions in the contact group and included new text in the preamble that had been proposed by one party.

124. The parties agreed to discuss the revised draft decision further in the contact group.

125. Subsequently, the co-chair of the contact group reported that the contact group had reached agreement on a draft decision on avoiding imports of energy inefficient products and equipment containing or relying on controlled substances, for consideration by the parties.

126. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

2. Strengthening the enabling environment to enhance energy efficiency in the cooling sector

127. In considering the sub-item, the parties had before them paragraphs 85 to 88 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2); volume 1 of the report of the Technology and Economic Assessment Panel of May 2024 (section 6.3); and paragraphs 121 to 136 of the report of the forty-sixth meeting of the Open-ended Working Group (UNEP/OzL.Pro.WG.1/46/5). The draft decision on the matter was set out in section II of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[I]).

128. The Co-Chair recalled that the topic of energy efficiency had been discussed at the forty-sixth meeting of the Open-ended Working Group, where the representatives of Grenada and the Federated States of Micronesia had introduced a draft decision aimed at strengthening the enabling environment to enhance energy efficiency in the cooling sector while implementing the Kigali Amendment. Owing to time constraints, the Working Group had not discussed the proposal fully and had therefore agreed to forward the draft decision to the current meeting for further consideration.

129. The representative of the Federated States of Micronesia recalled the content of the draft decision, noting that it contained requests to the Executive Committee of the Multilateral Fund to support parties' efforts to implement decision XXVIII/2 on the decision related to the amendment phasing down hydrofluorocarbons, including by further enabling the national ozone units and implementing agencies to develop a robust pipeline of high-quality project proposals and by supporting the creation of regional centres of excellence for energy efficiency. The Executive Committee was also requested to ensure that support was provided to address the unique challenges and special circumstances of low- and very low-volume-consuming countries. The OzonAction programme was requested to support the provision of additional training, capacity-building and technical assistance in support of the preparation and implementation of energy-efficiency projects. Finally, the Technology and Economic Assessment Panel was requested to continue updating the parties on issues of relevance to energy efficiency, including to ensure that the unique challenges and special circumstances of low- and very low-volume-consuming countries were taken into consideration. The representative of the Federated States of Micronesia said that a number of other parties had expressed interest in co-sponsoring the draft decision.

130. In the ensuing discussion, several representatives acknowledged the importance of the issue of energy efficiency in the light of the projected increase in the use of cooling equipment, and thus emissions, as global temperatures rose. Several representatives spoke of the challenges faced by low- and very-low-volume-consuming countries, with one recalling that an energy-efficiency project covering a group of Pacific island countries would be submitted for the consideration of the Executive Committee at its ninety-fifth meeting.

131. Several representatives highlighted ongoing work on energy efficiency by the Executive Committee. While supporting ambitious action, they cautioned against constraining the Committee's work or interfering with the flexible mandate already provided to the Committee before that ongoing work had come to fruition. Some representatives referred to the various funding windows related to energy efficiency that had already been established by the Executive Committee, with one representative stating that only some $5 million had been approved of the $20 million in the funding windows for pilot projects to maintain and/or enhance energy efficiency in the context of HFC phase-down. That meant that there was still funding available, which might be accessed by low- and very-low-volume-consuming countries. Another representative said that parties should look at the reason why funding was still available and whether there were too many constraints and conditions preventing parties from accessing the funds. He also stressed the importance of co-financing or incentives for industry to encourage it to enhance the energy efficiency of its products and equipment.

132. One representative proposed a model for the approach to centres of excellence for energy efficiency, citing the Africa Centre of Excellence for Sustainable Cooling and Cold Chain in Rwanda as an example to follow. Another representative welcomed the approach of establishing centres of excellence given the additional support needed by technicians. He noted that a number of training institutions in his country had the potential to become centres of excellence.

133. The parties agreed to establish a contact group, co-chaired by Alain Wilmart (Belgium) and Sergio Merino (Mexico), to discuss the draft decision further.

134. Later in the meeting, the representative of the Federated States of Micronesia, speaking also on behalf of Grenada, introduced a proposal for a draft decision set out in a conference room paper, explaining that it contained a few changes from the version presented at the forty-sixth meeting of the Open-ended Working Group. The main change was the addition of several co-sponsors, all small island developing States, namely the Cook Islands, Fiji, the Marshall Islands, Mauritius, Palau, Tuvalu and Vanuatu. Other changes were minor editorial amendments to improve clarity and correct errors. She said that she looked forward to discussing the draft decision in the contact group.

135. Subsequently, the co-chair of the contact group reported that the contact group had been unable to reach agreement on a draft decision on strengthening the enabling environment to enhance energy efficiency in the cooling sector.

136. A number of representatives expressed deep regret at the withdrawal of the draft decision, particularly following the proposals put forward by small island developing States. One representative underscored the significant challenges faced by those States owing to limited resources and the complexity of accessing them effectively, which severely constrained their ability to address the issues faced. Several representatives nonetheless reiterated their commitment to working collaboratively on the challenges faced, including through consideration of the outcomes of the ninety-fifth meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, which would help to determine any actions.

L. Nominations for critical-use exemptions for methyl bromide for 2025

137. In considering the item, the parties had before them paragraphs 89 to 92 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), volume 2 of the May 2024 report of the Technology and Economic Assessment Panel entitled "Evaluation of 2024 Critical Use Nominations for Methyl Bromide and Related Issues – Interim Report", volume 4 of the August 2024 report of the Technology and Economic Assessment Panel entitled "Evaluation of 2024 Critical Use Nominations for Methyl Bromide and Related Issues − Final Report", paragraphs 116 to 120 of the report of the forty-sixth meeting of the Open-ended Working Group of the Parties (UNEP/OzL.Pro.WG.1/46/5) and paragraphs 19 to 27 of the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2/Add.1–UNEP/OzL.Pro.36/2/Add.1).

138. Introducing the item, the Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, the Methyl Bromide Technical Options Committee had presented its interim recommendation for the approval of the full amount nominated for a critical-use exemption for methyl bromide for 2025, submitted by one non-Article 5 party, Canada. The Committee's final report, including its recommendation for approval of the full amount of the nomination submitted by Canada, was available on the meeting portal and was summarized in the addendum to the note by the Secretariat (UNEP/OzL.Conv.13/2/Add.1–UNEP/OzL.Pro.36/2/Add.1). On behalf of all the parties, she thanked the Committee for its work in evaluating the nomination.

139. Presenting the Committee's recommendation, Ian Porter, the co-chair of the Methyl Bromide Technical Options Committee, speaking also on behalf of his fellow co-chair, Marta Pizano, and all the members of the Committee, expressed the hope that it would be the final presentation of any critical-use nomination for methyl bromide and noted that it therefore represented an exciting occasion.

140. Only one application had been received for 2025, for 2.85 tonnes of methyl bromide for pre-plant soil fumigation at a single strawberry nursery in Prince Edward Island, Canada. The Committee was recommending the approval of the full amount on the basis that it represented a 26 per cent reduction from the amount approved in 2023 and also that Canada had put forward a plan to phase out methyl bromide use completely by 2026. The grower was continuing to work to increase its capacity for indoor soil-less production – a simple but very effective solution – resulting in a lower need for methyl bromide for the remaining production.

141. The amount approved could be adjusted to account for existing stocks of methyl bromide, in accordance with decision XVI/6, but Canada had reported no such stocks at the end of 2023. As the Committee had observed before, there was no requirement for any party not requesting a critical-use exemption to report stocks.

142. In conclusion, he observed that 2024 appeared to be the last year in which critical-use nominations would be submitted and contrasted the single nomination for 2.85 tonnes for 2025 with the 141 nominations, for over 16,000 tonnes, that the Committee had received in 2005. The reduction of over 62,000 tonnes of methyl bromide use over the previous two decades represented a huge achievement for the Montreal Protocol, and for the agricultural industry worldwide, and a significant gain for the ozone layer. The challenge now would be to reduce the estimated total of 8,000–10,500 tonnes of methyl bromide still consumed for quarantine and pre-shipment uses globally; he was aware that many countries were making significant progress in that regard. He concluded by congratulating all the parties that had brought to an end their use of methyl bromide.

143. The representative of Canada thanked the Panel and the Committee for their work in reviewing his party's nomination for 2025 and also their work in previous years. Since 2015, the sole critical-use exemption for Canada had been for pre-plant soil fumigation in the production of strawberry runners by a single grower in Prince Edward Island, where alternative chemical fumigants remained unavailable due to regulatory barriers. The nomination of 2.85 tonnes represented a significant reduction on the amount authorized for 2024 and was based on the adoption of a non-chemical alternative, indoor soil-less production for a significant portion of production, on the way to a complete transition away from methyl bromide in 2026. While the capital investment necessary was high, his party did not see that as a reason to delay the transition.

144. He thanked the Committee for approving the full amount of the nomination and confirmed that it would be his party's final nomination for the application. He introduced a proposal for a draft

decision, set out in a conference room paper, which permitted Canada a level of production and consumption of 2.85 tonnes of methyl bromide for use in the production of strawberry runners for 2025 with the same conditions as agreed by previous meetings of the parties.

145. One representative congratulated Canada on its final nomination, and all the parties for their efforts in ending critical uses of methyl bromide. She stated that she would like to continue discussions on the reduction of the remaining methyl bromide consumption for quarantine and pre-shipment uses. A representative of an Article 5 party observed that, in his country, methyl bromide-demand was increasing because of market conditions.

146. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

M. Changes in the membership of the Technology and Economic Assessment Panel

147. In considering the item, the parties had before them paragraphs 93 to 100 of, and annexes I and II to, the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), annexes 5 and 6 to volume 1 of the May 2024 report of the Technology and Economic Assessment Panel, the matrix of needed expertise, the terms of reference of the Technology and Economic Assessment Panel and its technical options committees and temporary subsidiary bodies, the primer on the operation of the Technology and Economic Assessment Panel, and paragraphs 28 to 30 of the addendum to the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2/Add.1–UNEP/OzL.Pro.36/2/Add.1).

148. The Co-Chair recalled that, at the forty-sixth meeting of the Open-ended Working Group, attention had been drawn to the list of the co-chairs and members of the Technology and Economic Assessment Panel and technical options committees whose membership was due to expire at the end of 2024, as listed in the 2024 progress report of the Panel. To date, the Secretariat had received 10 nominations, which had been posted on the meeting portal. He encouraged parties to submit additional nominations as soon as possible.

149. The parties agreed that nominating parties and any other interested parties would discuss and agree on the nominations in an informal group; the Secretariat would then prepare a draft decision setting out the agreed nominations for further discussion.

150. Subsequently, the facilitator of the informal group, Michel Gauvin (Canada), reported that the informal group had been able to complete its work and had produced a draft decision for consideration by the parties.

151. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

N. Compliance and data reporting issues: the work and recommendations of the Implementation Committee

152. In considering the item, the parties had before them paragraphs 101 and 102 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2).

153. The President of the Implementation Committee, Osvaldo Patricio Álvarez-Pérez (Chile) presented a report on the outcomes of the seventy-second and seventy-third meetings of the Committee, including an overview of the draft decisions approved by the Committee for consideration by the Thirty-Sixth Meeting of the Parties.

154. The Committee had considered a variety of issues in 2024 in relation to reporting obligations under Articles 7 and 9 of the Montreal Protocol, including HFC reporting obligations under the Kigali Amendment and cases of non-compliance, adherence by individual parties to commitments in plans of action for returning to compliance, requests for changes to baseline data for HFCs, information on the establishment of licensing systems for HFCs, and the submission of provisional data in the context of Article 7 reporting. The Committee had also received reports from the secretariat of the Multilateral

Fund on relevant decisions of the Executive Committee of the Fund and on activities carried out by the implementing agencies to facilitate compliance by parties.

155. As requested by the Thirty-Fifth Meeting of the Parties in decision XXXV/17, the Committee had reviewed the status of four parties in non-compliance with their Article 7 data reporting obligations and noted that all four parties had reported the outstanding data as requested in the decision. The Committee had also considered the adherence to commitments contained in plans of action to return to compliance for three parties: Kazakhstan and Libya continued to adhere to their commitments under their plans, but an issue remained regarding the data for 2021 for the Democratic People's Republic of Korea. The President drew attention to a conference room paper setting out the four draft decisions which the Committee was forwarding for the consideration of the Thirty-Sixth Meeting of the Parties.

156. The first draft decision related to data reporting under Article 7 of the Protocol. In the draft decision, it was noted that, as at 29 October 2024, 192 of the 198 parties to the Protocol had reported data for 2023 and that 163 of those parties had reported their data by the deadline of 30 September 2024, with 80 of those having reported by 30 June 2024, in accordance with the encouragement in decision XV/15. It was noted with concern that six parties, namely Azerbaijan, the Democratic People's Republic of Korea, Djibouti, Iceland, Mali and San Marino, had not yet reported their data for 2023, placing them in non-compliance until such time as the Secretariat received their outstanding data. It was also noted with concern that one Article 5 party, Djibouti, that had ratified the Kigali Amendment, had not submitted its baseline data for HFCs for 2020, 2021 or 2022, thereby placing the party in non-compliance until such time as the Secretariat received the outstanding baseline data for HFCs. Furthermore, it was noted with concern that two Article 5 parties, namely Côte d'Ivoire and Guinea, that had ratified the Kigali Amendment and should have submitted data for HFCs for 2023, had submitted data for other controlled substances but not for HFCs, which placed them in non-compliance with their data reporting obligations until such time as the Secretariat received their outstanding data for HFCs. In the draft decision, all those parties were urged to report their data as soon as possible and the Committee was requested to review their situation at its seventy-fourth meeting. Lastly, the draft decision encouraged parties to continue reporting their data on the consumption and production of controlled substances as soon as those figures were available, and preferably by 30 June of the reporting year. The Committee had approved the draft decision on the understanding that the Secretariat would continue to update the draft by removing the name of any party that returned to compliance by providing its outstanding data between the time of the Committee meeting and the adoption of the draft decision by the Thirty-Sixth Meeting of the Parties, in line with past practice.

157. In the second draft decision, it was noted with concern that the Democratic People's Republic of Korea had not strictly adhered to its commitments for HCFC production and consumption for 2021, as set out in its plan of action to return to compliance contained in decision XXXII/6, and was in non-compliance with the consumption control measures for that substance for 2021 under the Protocol. Serious concern was also expressed regarding the fact that the party had not yet provided an explanation for those deviations from its plan of action or submitted a revised plan of action, despite several requests by the Committee, namely at its sixty-eighth, sixty-ninth, seventieth, seventy-first and seventy-second meetings, and repeated reminders from the Secretariat. Furthermore, the party was urged to submit the progress report on the establishment of additional national policies facilitating HCFC phase-out that had been requested in decision XXXV/18.

158. It was noted that the Democratic Republic of Korea had not reported its Article 7 data for 2023, meaning that the party remained in non-compliance with its data reporting obligations until such time as the Secretariat received the outstanding data. The party was therefore urged to provide an explanation for the deviations, together with Article 7 data for 2023, and, if appropriate, to submit a revised plan of action for consideration by the Implementation Committee at its seventy-fourth meeting. The party was also urged to submit a progress report on efforts to establish additional national policies facilitating HCFC phase-out. Furthermore, the Democratic People's Republic of Korea was invited to send a representative to the seventy-fourth meeting of the Committee, unless the party had provided the information required before that meeting.

159. The Democratic Republic of Korea was cautioned, in accordance with item B of the indicative list of measures that could be taken by the Meeting of the Parties in respect of non-compliance, and the Committee was requested to continue to monitor closely the progress made by the party in implementing its plan of action and obligations under the Montreal Protocol.

160. He drew attention to the fact that the Committee had adopted recommendations regarding cases of non-compliance in relation to the Democratic Republic of Korea on five separate occasions,

including forwarding two decisions that had been adopted on the matter, one by the Thirty-Second Meeting of the Parties and one by the Thirty-Fifth Meeting of the Parties.

161. The third draft decision related to the establishment of licensing systems for HFCs under Article 4B, paragraph 2 bis, of the Protocol by parties that had ratified the Kigali Agreement. In the draft decision, it was noted with appreciation that 154 of the 160 parties that had ratified the Kigali Amendment, and five parties that had not yet ratified it, had reported the establishment and implementation of their licensing system for HFCs. In the decision, Angola, Kenya and San Marino, which had ratified the Kigali Amendment but had not yet reported on the establishment of their licensing system, were urged to provide information to the Secretariat promptly on the establishment and implementation of such a system for consideration by the Committee at its seventy-fourth meeting. All remaining parties that had ratified the Kigali Amendment were also urged to establish and implement their licensing systems, if they had not already done so, and to report that information to the Secretariat within three months of doing so. The Committee had approved the draft decision on the understanding that the Secretariat would continue to update the figures in the draft decision in line with any additional information received from parties up until the point of adoption of the draft decision by the Thirty-Sixth Meeting of the Parties.

162. The fourth draft decision related to the requests received from El Salvador and Honduras to revise baseline data. It was noted that, in decision XIII/15, parties that requested changes in reported baseline data for base years had been advised to present their requests before the Committee, and that the methodology for submitting such requests had been outlined in decision XV/19. El Salvador had presented sufficient information, in accordance with decision XV/19, to justify its requests to revise its consumption data for HFCs for 2020, 2021 and 2022, which were the HFC baseline years, and the same applied to Honduras, which had requested a revision to one of its baseline years, namely 2022. The requests of the parties to revise their consumption data for HFCs for the relevant baseline years had merit and had been forwarded for consideration by the parties.

163. He noted that the Committee had also conducted thorough reviews of requests for changes to baseline data received from 10 other parties, namely Armenia, the Cook Islands, Kiribati, Liberia, the Marshall Islands, Nauru, Nigeria, Niue, Tuvalu and Vanuatu. In all 10 cases, the Committee had concluded that the information submitted had been insufficient and had therefore asked the parties to submit to the Secretariat the outstanding information needed to meet the requirements of decision XV/19 to allow for the future consideration of their request by the Committee.

164. The Secretariat had brought the issue of submission of provisional data in the context of Article 7 reporting to the attention of the Committee at its seventy-second meeting. At that meeting, the Committee had requested the Secretariat to prepare a document containing an analysis of trends in the submission of provisional data, as well as any previous discussions and decisions of the Committee on the matter and any other relevant information. The document had been considered by the Committee at its seventy-third meeting.

165. Although the earliest recorded case traceable from the electronic records of a party submitting provisional data was from 2005, regarding data for 2004, the Secretariat informed the Committee that provisional data had also been submitted by parties before 2005. Since 2019, when the new online reporting system had been launched, 67 cases of data reported as provisional had been identified from 38 parties, which accounted for almost one-fifth of parties, with 40 of those cases pertaining to baseline years. Parties had indicated that data were provisional either by email or by using a checkbox on the online reporting system, and the practice had become more common in recent years, with some parties submitting data and only later informing the Secretariat that the data should be considered provisional. On receiving data flagged as provisional, the Secretariat contacted the relevant party to ascertain whether the data could yet be considered final and, if not, to request that the finalized data be submitted as soon as possible, and continued to contact the party until finalized data were received. It was worth noting, however, that there were instances where data had remained provisional for a period of several years.

166. The submission of provisional data was problematic for the work of the Committee as, without finalized data, it was impossible to ascertain compliance with the control measures under the Protocol. Moreover, a party that submitted provisional data for baseline years could circumvent the process for revising baseline data set out in decision XIII/15.

167. Following the discussions of the Committee, the Secretariat had deleted the checkbox from the online reporting system that allowed a party to indicate that the data submitted were provisional. The Secretariat would also ask any parties that submitted Article 7 data as provisional to explain why provisional data had been submitted and would also submit those data and any related information from the party to the Committee for its consideration.

168. Finally, he thanked the members of the Committee, in particular the Vice-President, for their constructive engagement and support, through which they had contributed to the successful operation of the compliance mechanism of the Protocol, and the Secretariat for its excellent support. The growing agenda of Committee meetings was an indication that its work was becoming ever more relevant, and he said that it had been a privilege to serve as President of the Committee.

169. In the ensuing discussion, the representative of Kenya explained that his country was currently finalizing regulations for the establishment of a licensing system for HFCs and therefore expected to be able to report to the Secretariat before the seventy-fourth meeting of the Committee that its system had been established and was in operation. The representative of the United Republic of Tanzania explained that his country had established a licensing system for ozone-depleting substances in 2022. The representative of Benin said that, in the table showing provisional data submitted in the context of Article 7 reporting, the data for her country were incorrect, as Benin had informed the Secretariat in a letter sent on 31 July 2024 that although the data for 2020, 2021 and 2023 remained provisional, the data for 2019 were final.

170. Regarding the request of her country to revise its HFC baseline data, the representative of Armenia explained that her country's original baseline data had been obtained from national institutions, including its customs service and the licensing authority of the Ministry of Environment, but that a survey of equipment conducted under the Kigali implementation plan process had shown that import data for HFCs had been significantly underestimated. Armenia had identified that the underestimation had been as a result of the free trade regime within the Eurasian Economic Union, of which Armenia was a member State, and of online trading that had circumvented regulatory control. The party had since taken measures to improve monitoring and control in those two areas. Armenia had submitted revised baseline data on the online reporting platform in January 2024 but, as it had not been aware of the option to mark the original data as provisional, had been informed that it was required to submit a request for revision and provide the information required under decision XV/19. Armenia was not able to provide the requested additional documents because they were not available and, although it appreciated the opportunity to explain its situation in person at the seventy-third meeting of the Committee and also appreciated the understanding shown in the draft recommendation of the Committee in allowing for the submission of additional information in 2025, the party remained concerned that it could be unintentionally in non-compliance for 2024.

171. Many representatives expressed their concern at the practice of submitting provisional data, which was not envisaged in the provisions of the Protocol or in any decisions of the meetings of the parties, and several representatives said that they had previously been unaware of the practice. Some representatives underscored the seriousness of the situation, including from a legal standpoint, as parties had not been treated equally, with some being able to circumvent the revision process provided for in decision XV/19. A number of representatives also noted that changes to data had implications for financing under the Executive Committee and for project implementation. It was critical that funding was not affected by the issue. One representative said that it was unclear whether the Committee would review data flagged as provisional or would only review data once they had been finalized. Several representatives expressed the view that the option to mark data as provisional should be removed.

172. A number of representatives, noting that some parties faced significant challenges with regard to institutional capacity for data reporting, in particular where large volumes of data could not be processed at speed by customs services, said that the submission of provisional data was preferable to the lack of any submission. It was therefore important for parties to work together to find suitable solutions that would support those parties not currently able to provide timely finalized data. Other representatives agreed that it was important for parties to work together towards solutions but underscored that there were already processes in place pursuant to decisions of the meetings of the parties for the revision of data. It was incumbent upon parties to follow those processes.

173. Many representatives referred in particular to the provisional data checkbox on the online system. One representative recalled that the inclusion of the checkbox had been discussed at regional networks with the Secretariat before the launch of the online system and had been welcomed in particular by developing countries that were facing challenges in timely data collection. It was disappointing that the Secretariat had not discussed with parties or even informed parties of the decision to remove the checkbox. Several representatives expressed concern that a checkbox had been included on the online system, as there was no such checkbox on the paper form. They recalled that the paper form and other associated processes had been adopted by decision of a meeting of the parties, so the inclusion of the checkbox on the online system ran counter to those decisions.

174. In response to questions from several representatives regarding the recent sudden removal of the checkbox from the online reporting system and the authority for doing so, the President of the Committee and representatives of the Secretariat clarified that the Committee had not requested that the Secretariat remove the provisional data checkbox from the online reporting system but that the Secretariat had done so in the light of discussions at the seventy-third meeting of the Committee. In response to that explanation, a number of representatives expressed concern that such actions were being taken by the Secretariat unilaterally rather than in response to a decision of a meeting of the parties and also that the action had not been communicated to parties. They requested clarification of the legality of such actions by the Secretariat and clarification of the correct procedures regarding decisions on such matters, including regarding the role of the Implementation Committee.

175. In response to a query regarding the process for requests from parties for the revision of baseline data, the President clarified that the Committee adhered strictly, and solely, to the process outlined in decision XV/19.

176. Several representatives requested that a contact group or informal group be established to discuss the issue further, focusing both on the implications of the submission of provisional data in the past and on ways of preventing the practice in the future.

177. The parties agreed to establish an informal group to consider how the submission of provisional data had become practice and, in the light of decisions on data reporting, how the issue of provisional data should be handled in the future.

178. Subsequently, the facilitator of the informal group, Martin Lacroix (Canada), reported that the Secretariat had provided clarifications to the interested parties, including on how provisional data had been treated in the past and how they would be treated in the future, and had indicated that, moving forward, data qualified as provisional would be submitted to the Implementation Committee for its consideration.

179. The representative of Armenia said that having two types of cases for the treatment of provisional data created unequal conditions, attitudes and treatment within the Implementation Committee, which had not been mandated to treat provisional data that referred to baseline years. In addition, there remained a lack of clarity on how to address the unfair and discriminatory conditions inadvertently created through the approach of the Secretariat towards countries with provisional data for baseline years and those without such data. Some parties had enjoyed the privilege of being able to update their baseline years and of circumventing the formal process, while others had been required to strictly follow the procedures stipulated under decisions XIII/15 and XV/19. Despite the understanding shown by the Implementation Committee, and due consideration of the request by Armenia regarding the provision of baseline data submitted in 2024, a final decision had yet to be taken, placing her country in a position of potential non-compliance with the freeze level for the year 2024. Armenia would continue to seek the non-punitive and supportive attitude of the Implementation Committee, in accordance with the mandate of that body.

180. The parties agreed to forward the set of draft decisions for further consideration and possible adoption during the high-level segment.

O. Status of ratification of the Kigali Amendment to the Montreal Protocol

181. In considering the item, the parties had before them paragraphs 105 and 106 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2) and the note by the Secretariat on the status of ratification, acceptance, accession or approval of the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (UNEP/OzL.Pro.36/INF/5). The draft decision on the matter was set out in section IV of document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decision XXXVI/[EE]).

182. Introducing the sub-item, the Co-Chair explained that the intention behind the agenda item was to record the number of parties that had ratified the Kigali Amendment, and to urge parties that had not yet ratified the Amendment to do so. She recalled that, on the International Day for the Preservation of the Ozone Layer 2024, the Secretary-General of the United Nations and the Executive Director of UNEP had recalled the potential benefits of the full implementation and ratification of the Kigali Amendment, which could help to avoid as much as 0.5°C of global heating by the end of the century. Four out of every five nations had already ratified the Amendment, but the clock was ticking. As indicated by the Executive Secretary in her opening statement, universal ratification in 2026, on the tenth anniversary of the Kigali Amendment, was an important target to achieve.

183. By 25 October 2024, a total of 160 parties had ratified the Amendment, as listed in document UNEP/OzL.Pro.36/INF/5. A placeholder draft decision had been included as draft decision XXXVI/[EE], in document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3, which would be updated at the time of the adoption of the decision.

184. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

V. Vienna Convention issues

A. Report of the twelfth meeting of the Ozone Research Managers of the Parties to the Vienna Convention

185. In considering the item, the parties had before them paragraphs 107 to 118 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2), the note by the Secretariat on recommendations of the Ozone Research Managers of the parties to the Vienna Convention at their twelfth meeting (UNEP/OzL.Conv.13/6), the note by the Secretariat on the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention (UNEP/OzL.Conv.13/7) and the report of the twelfth meeting of the Ozone Research Managers of the parties to the Vienna Convention for the protection of the ozone layer (presentation summaries and recommendations: part I and national reports available for the meeting: part II).

186. The Co-Chair recalled that the twelfth meeting of the Ozone Research Managers of the Parties to the Vienna Convention had been held in Geneva in April 2024. The Ozone Research Managers met every three years, six months before the meeting of the Conference of the Parties to the Vienna Convention, to discuss issues relating to ozone research and systematic observation and to develop recommendations for consideration by the Conference of the Parties. Those recommendations were set out in document UNEP/OzL.Conv.13/6.

187. The Co-Chairs of the twelfth meeting of the Ozone Research Managers, María del Carmen Cazorla Andrade (Ecuador) and Wolfgang Steinbrecht (Germany), gave a joint presentation on the outcomes of that meeting. Ms. Cazorla first clarified that the purpose of the reports of the Managers was to address research and monitoring needs and to make specific recommendations regarding international action for improved research coordination and networking. After giving a summary of the main items discussed at the meeting, she said that the recommendations of the Managers had been formulated within a framework comprising five themes: research needs; systematic observations; gaps in atmospheric monitoring of controlled substances and options to enhance such monitoring; data archiving and stewardship; and capacity-building.

188. On the matter of research needs, continued observation and modelling of ozone variations and trends were required. In addition, understanding should be improved in the areas of lower stratospheric ozone in connection to climate change; emissions of ozone-depleting substances and other relevant gases; ozone-climate coupling and global circulation changes; and the effects of extreme wildfires, volcanic eruptions, supersonic aviation, space activities and climate intervention. To that end, it was important to continue, enhance and expand relevant monitoring and observation activities, maintaining proven systems and accelerating the implementation of new and cost-effective instruments.

189. Mr. Steinbrecht went on to address the issue of gaps in the monitoring of controlled substances, highlighting the need to expand monitoring activities in under-sampled regions and to leverage existing monitoring stations and programmes. In that regard, the Ozone Research Managers recommended that parties discuss funding regimes to sustain measurement activities, while emphasizing the importance of quality-assessed and reviewed data with open access. Meanwhile, capacity-building should be scaled up, including by enhancing the funding available in the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, and fostering scientific partnerships among researchers in developing and developed countries.

190. The representative of Finland introduced a draft decision, set out in a conference room paper, on the recommendations of the twelfth meeting of the Ozone Research Managers of the Parties to the Vienna Convention, submitted by Ecuador, Finland and Indonesia as members of the Bureau of the twelfth meeting of the Conference of the Parties. The draft decision took note with appreciation of the report of the twelfth meeting of the Ozone Research Managers; and encouraged parties to adopt and implement the recommendations therein, and to accord priority in particular to research and systematic

observation activities; maintaining, augmenting, restoring and, where feasible, establishing new long-term capacity and infrastructure for the atmospheric monitoring and observation of substances controlled by the Montreal Protocol; improved management and analysis of observation data; and support for capacity-building activities in developing countries. It also encouraged the national ozone focal points to improve communication with the Ozone Research Managers, and requested the Managers to continue to review the situation regarding atmospheric measurements and monitoring of substances controlled by the Montreal Protocol, and to make specific recommendations for further strengthening such atmospheric monitoring.

191. The parties agreed to discuss the matter further in the contact group on enhancing global and regional atmospheric monitoring.

192. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

B. Status of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention

193. In considering the item, the parties had before them paragraphs 119 to 121 of the note by the Secretariat on issues for discussion by and information for the attention of the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol (UNEP/OzL.Conv.13/2–UNEP/OzL.Pro.36/2) and the note by the Secretariat on the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention (UNEP/OzL.Conv.13/7).

194. The Co-Chair recalled that, at its tenth meeting, the Conference of the Parties had established an advisory committee for the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention in an effort to improve its performance by ensuring that projects to be funded from the Trust Fund were of high quality. The Committee had also been requested to develop a short-term plan and a long-term strategy for the Trust Fund to enhance its effectiveness. The status of the Trust Fund and its activities, as well as information on the work of its Advisory Committee regarding the implementation of the long-term strategy and short-term plan of action of the Trust Fund, were set out in document UNEP/OzL.Conv.13/7.

195. A member of the Advisory Committee, A. R. Ravishankara, presented a report on the work of the Committee, on behalf of its Chair, Sophie Godin-Beekmann. He said that the Committee had been established in 2014 to develop a long-term strategy and a short-term action plan that included identifying gaps and needs in research on and monitoring of ozone and related climate variables, facilitating the relocation of unused instruments to new observation programmes, fostering stronger relationships with scientific institutions and related global networks and exploring opportunities to leverage and catalyse the resources of the Trust Fund. One of the key aims of the Trust Fund was to enable capacity-building, notably for the benefit of Article 5 parties and countries with economies in transition. Since the twelfth meeting of the Conference of the Parties, the results yielded had been excellent for the amount of resources spent. Such resources should be considered “seed money” that was destined to initiate, nourish and maintain programmes within countries. However, funding was limited, and the replenishment of the Trust Fund required collective cost-sharing efforts among countries. More resources would allow proposals related to the monitoring of controlled substances to be implemented, to ensure that the goals of the Montreal Protocol were met and to shift the focus away from the short term and towards the long-term strategy. He highlighted the needs and gaps identified by the Committee, which included the need to strengthen total ozone observations in the tropics and subtropics, and parts of the southern hemisphere; the need for high-quality measurements; calibration and validation of satellite sensors; a transition away from the use of legacy instruments; vertical distribution of ozone; the need for scientific activity to support the Montreal Protocol; and the need for quantification of emissions of controlled substances.

196. The representative of the Secretariat gave a presentation on the status of the Trust Fund, which had been established in 2003 pursuant to decision VI/2 of the Conference of the Parties. Among its functions, the Trust Fund provided complementary support for the continued maintenance and calibration of the existing ground-based stations, under the Global Atmosphere Watch programme of the World Meteorological Organization (WMO), that were monitoring column ozone, ozone profiles and ultraviolet radiation in developing countries and countries with economies in transition. The decision also provided that consideration could be given to supporting other activities identified by the Ozone Research Managers. A memorandum of understanding on institutional arrangements had been signed by UNEP and WMO in 2005. Projects and activities were implemented through WMO and, since 2015, had been overseen by the Advisory Committee, pursuant to decision X/3 of the

Conference of the Parties. Between 2003 and 30 September 2024, the Trust Fund had received total funds of $943,879 from contributing parties and in-kind contributions in conjunction with activities implemented under the Trust Fund. During that same period, a total of $635,426 had been disbursed and allocated to approved activities, which included calibration and relocation of Brewer instruments, intercomparisons and relocations of Dobson instruments, an ozone observatory and ozone sondes, ultraviolet B monitoring, and workshops. The total funds currently available for future activities totalled $308,453. The Secretariat periodically sent requests for the submission of proposals for seed funding and, since 23 November 2023, proposals had been received in the categories of ozone monitoring and ultraviolet monitoring, among others. In October 2024, the Advisory Committee had evaluated all new proposals and the Secretariat had provided responses to the proposing parties, including with requests for follow-up actions.

197. The representative of WMO gave a presentation on the role of WMO in supporting the Advisory Committee, including in relation to ozone measurement instruments, capacity-building activities in various countries, and anticipating regional needs for intercalibration exercises. Over the previous three years, WMO had supported the implementation of several projects, some of which had been completed, in the Comoros and Kyrgyzstan; others that were on hold, in Belarus and Burkina Faso; and some that were ongoing or planned, including work in Mexico on monitoring solar ultraviolet radiation in Central America and the Caribbean. The planned activities of WMO included action to anticipate future intercalibration proposals to the Trust Fund, which was complex in terms of organization and involved costs that could not be covered by the Trust Fund alone. Data were also delivered following intercalibration exercises. The results of past activities had shown that, after the completion of projects, high-quality information was available from many sites worldwide, which could be used to provide information to countries on the status of ozone recovery. WMO was also supporting a strategic plan for ozone and on the monitoring of ozone-depleting substances worldwide, as well as ozone science through observation, analysis modelling and capacity-building, and was working to expand the observational network, which was a challenge, especially for ozone-depleting substances in areas where data were missing. Additional funding and enhanced collaboration would be needed to address that issue. Lastly, the preparation of the 2026 scientific assessment of ozone depletion by scientific experts was currently under way.

198. The representative of Finland introduced a draft decision, set out in a conference room paper, on the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, submitted by Ecuador, Finland and Indonesia. Some elements of the draft decision related to activities undertaken by the Advisory Committee and the Trust Fund over the years and others related to new efforts with regard to controlled substances. In the decision, it was suggested that the parties recognize that the purpose of the General Trust Fund included supporting activities related to the atmospheric monitoring of substances controlled under the Montreal Protocol, a point also emphasized in the recommendations made by the Ozone Research Managers at their twelfth meeting, and parties were encouraged to make contributions to the General Trust Fund for the purpose of improving the global ozone observing system and for enhancing the global and regional monitoring of substances controlled by the Montreal Protocol. Requests were included for the Secretariat to organize the work of the Advisory Committee, modifying the terms of reference of the General Trust Fund and those of the Advisory Committee; to continue to invite parties and relevant organizations, agencies and institutions to make financial and/or in-kind contributions towards well-defined and well-budgeted project proposals developed under the Trust Fund; to facilitate the receipt of additional funds for the monitoring of controlled substances; to ensure that the management of those funds adhered to the relevant established financial procedures and reporting requirements; and to report to the Conference of the Parties at its fourteenth meeting on the operation of, contributions to and expenditures on the activities funded from the Trust Fund since its inception.

199. The parties agreed to discuss the matter further in the contact group on enhancing global and regional atmospheric monitoring, with a focus on the highlighted elements in the conference room paper.

200. In the ensuing discussion, several representatives expressed appreciation for the report. With reference to the activities that were currently on hold due to political instability, one representative asked whether the Advisory Committee could consider cancelling such activities on the understanding that they could be reconsidered at a later date. Moreover, there were a significant number of proposed activities in the report, some of which were not in line with the mandate, while others should be advanced and receive funding. Another representative emphasized that the collection of sufficient volumes of data was essential and suggested that part of the Trust Fund be dedicated to data archiving. One representative welcomed the increase in voluntary contributions since the previous meeting of the Conference of the Parties but highlighted that the level of available funds remained too low to meet the need for a global ozone monitoring network. Furthermore, cooperation with Article 5 parties was

required to improve work in terms of using new equipment and data, and integrating a new generation of scientists in the future. Finally, he drew attention to atmospheric monitoring in his country, which had acquired significant expertise through the use of monitoring station equipment over a 45-year period, and highlighted the potential offered by the mountainous terrain, which could serve as a place to observe and monitor the stratosphere.

201. In response to the observation on activities currently on hold, the representative of the Secretariat confirmed that the Advisory Committee had considered the matter and, during its meeting on 26 September 2024, had decided that the funds corresponding to such activities could be diverted to others. Nonetheless, the Committee had proposed to engage in bilateral discussions with the countries concerned at the current meeting before any such action was taken.

202. Responding to the comments made, Mr. Ravishankara reiterated the importance of involving a younger generation in the activities under discussion, including by contributing to assessment, modelling and knowledge analysis activities. He also highlighted the need for countries to ensure the availability of archived data. The representative of WMO added that the individuals involved in data management should receive training on how to connect with data centres.

203. The parties agreed to forward the draft decision for further consideration and possible adoption during the high-level segment.

VI. Other matters

A. Information on HFC-245cb and other isomers not listed in Annex F to the Montreal Protocol

204. The Co-Chair recalled that, during the adoption of the agenda, it had been agreed to discuss the information in the note by the Secretariat on HFC-245cb and other isomers not listed in Annex F to the Montreal Protocol (UNEP/OzL.Pro.36/INF/6).

205. Issues raised by representatives included that the information provided in the document was of great complexity, contained extraneous details and had only very recently been made available; therefore, preparations to engage in related discussions had not been made. Some representatives suggested that consideration of the issue should be postponed to the next meeting of the Open-ended Working Group. They also highlighted that certain issues referred to in the document had already been discussed at other meetings, including HFCs with no commercial uses, and GWP values to be used for the Kigali Amendment. The issue surrounding the substance HFC-245cb should be the focus, said one, while another requested the Secretariat to prepare a brief note on that isomer, which did not have a GWP, and whose inclusion it had proposed as an HFC controlled under the Kigali Amendment. Some representatives said that any changes to the HFCs currently listed in Annex F would require careful and in-depth consideration, which should take place in 2025.

206. In response to the comments made, a representative of the Secretariat said that mention was made in the document that very recently, in September 2024, the Secretariat had become aware of a planned importation of a mixture containing HFC-245cb, which was an isomer of two controlled substances included in Annex F to the Montreal Protocol. Moreover, the 2022 Assessment Report of the Medical and Chemicals Technical Options Committee had indicated that a number of HFCs had not been listed in Annex F and had global-warming-potential values above the threshold of 53, of which six had a known commercial use, including HFC-245cb. The Committee had concluded that the parties might wish to consider the six HFCs with commercial use. The Secretariat had subsequently prepared the information document for the consideration of the parties, given that no information had previously been available on the production, consumption or atmospheric burden of those compounds.

207. The representative of Switzerland said that all the parties should have full clarity on all commercially relevant substances controlled under the Montreal Protocol, including access to all the information related to the reporting of production and consumption under Article 7, in order to evaluate any effects on their compliance under the Montreal Protocol. Notably, clarity on the GWP of substances was indispensable, without which substances might be omitted in reporting, which would lead to emissions of controlled substances being ignored, thereby undermining the implementation of the Kigali Amendment. Understandably, parties had not had sufficient time to prepare for discussions; however, the exchange of initial ideas in an informal setting could be very beneficial, particularly in preparation for the next meeting of the Open-ended Working Group.

208. The Co-Chair confirmed that informal discussions on the issue, as suggested and welcomed by several representatives, could be held in the margins of the current meeting.

209. Subsequently, reporting back on informal discussions, the representative of Switzerland said that the parties involved in the discussions had expressed the view that the document prepared by the Secretariat (UNEP/OzL.Pro.36/INF/6) had not provided sufficient factual information on the case of planned importation of a mixture containing HFC-245cb for a conclusion to be reached on the matter at the current meeting. He therefore proposed that the issue of isomers not listed in Annex F should be considered further by parties once additional information became available from parties themselves, through the Secretariat, or from the assessment panels, for example in their quadrennial reports, as mandated in decision XXIX/12.

210. The parties concluded their consideration of the matter.

B. Change in the cut-off date for eligible capacity indicated in paragraph 17 of decision XXVIII/2

211. The Co-Chair recalled that, during the adoption of the agenda, the parties had agreed to consider a proposal to change the cut-off date for eligible capacity indicated in paragraph 17 of decision XXVIII/2.

212. The representative of Egypt introduced a proposal for a draft decision set out in a conference room paper. He recalled that paragraph 17 of decision XXVIII/2 stated that the cut-off date for eligible capacity was 1 January 2020 for those parties with baseline years from 2020 to 2022 and 1 January 2024 for those parties with baseline years from 2024 to 2026. Egypt had ratified the Kigali Amendment on 22 August 2023, with the process taking longer than intended owing to the coronavirus disease (COVID-19) pandemic. Some factories had been established after the cut-off date and before the ratification, and they had managed to get approval to produce domestic air-conditioning units based on R-410A. Egypt was therefore proposing to change the cut-off dates for eligible consumption set out in paragraph 17 of decision XXVIII/2, such that the cut-off date for eligible capacity for those parties with baseline years from 2020 to 2022 would be 31 December 2022. The cut-off date for eligible consumption for those parties with baseline years from 2024 to 2026 would remain unchanged, at 1 January 2024.

213. Subsequently, the representative of Egypt reported that his delegation had held informal discussions with some parties on the matter, notably with other members of the group of African States during a regional meeting, but not with other parties. He expressed regret that there had not been sufficient time or opportunity to discuss the proposed draft decision with other parties and requested that the item be added to the agenda for the forty-seventh meeting of the Open-ended Working Group.

214. A number of representatives underscored the importance of considering the issue further in order to support parties in remaining compliant with their obligations under the Protocol and its Kigali Amendment. In response to a query from one representative, the Co-Chair explained that, as no party had requested the floor after the draft decision had initially been introduced by the representative of Egypt, that party had been invited to engage in informal discussions with other parties on the matter.

215. The parties agreed to add an item on a change in the cut-off date for eligible capacity indicated in paragraph 17 of decision XXVIII/2 to the agenda of the forty-seventh meeting of the Open-ended Working Group.

Part two: high-level segment (31 October and 1 November 2024)

I. Opening of the high-level segment

216. The high-level segment was opened by Ndiaye Cheikh Sylla (Senegal), President of the twelfth meeting of the Conference of the Parties to the Vienna Convention, at 10.05 a.m. on Thursday, 31 October 2024.

217. A Thai cultural dance performance was presented.

218. Opening statements, summarized below in the order of delivery, were made by Elizabeth Maruma Mrema, Assistant Secretary-General of the United Nations and Deputy Executive Director of the UNEP; Akanat Promphan, Minister of Industry of Thailand; Ndiaye Cheikh Sylla, President of the twelfth meeting of the Conference of the Parties to the Vienna Convention; and Azra Rogović-Grubić, President of the Thirty-Fifth Meeting of the Parties to the Montreal Protocol.

A. Statement by a representative of the United Nations Environment Programme

219. In her opening address, Ms. Mrema highlighted the significance of the current period in terms of lawmaking by the international environmental community. The current meeting, in particular, showcased the potential of multilateral action when supported by complete commitment and appropriate resources. Moreover, the ozone treaties had proved that international cooperation was effective in yielding positive results. To date, the global implementation of the Montreal Protocol had led to the phase-out of 99 per cent of ozone-depleting substances and, given that most of them were also powerful greenhouse gases, corresponded to a reduction of approximately 12.5 billion tonnes of CO_2 equivalent. Continued compliance with the treaties would ensure the recovery of the ozone layer, including the ozone layer over the Antarctic. By the end of the century, a healthy ozone layer could also help to ensure the avoidance of an additional 0.5–1 degree Celsius of globally averaged surface warming, by protecting the terrestrial carbon sink from ultraviolet radiation damage. Thus, the work of the Montreal Protocol and its Kigali Amendment was crucial. Currently, 160 of the 198 parties to the Montreal Protocol had ratified the Kigali Amendment, including Thailand earlier in 2024. The tenth anniversary of the Amendment, in 2026, represented an exciting opportunity to achieve universal ratification. UNEP stood ready at both the political and the technical levels to support countries in achieving that goal.

220. The Montreal Protocol was estimated to be able to prevent approximately 2 million cases of skin cancer every year, and millions of cases of cataracts and eye disease. Filtering harmful ultraviolet radiation also protected crops and food chains, constituting an important step towards the achievement of the Sustainable Development Goals, particularly Goal 2. Furthermore, if the phase-down of HFCs was accompanied by energy efficiency enhancement in the cooling sector, the climate benefit could be doubled. Other multilateral environmental agreements and the international community should learn from the Montreal Protocol, whose success was the result of a clearly defined goal, recognition of the needs of developing countries and collaboration between scientists and policymakers, as well as its financial mechanism, which included the Multilateral Fund. Continuing to face the remaining and emerging challenges was key, including through the full implementation of the Kigali Amendment.

B. Statement by the representative of the Government of Thailand

221. Welcoming participants to Bangkok, Mr. Promphan said that his country recognized the significance of ozone depletion, chemicals management and climate change as part of the continuing planetary crisis that required action by the international community. Ever since its ratification of the Montreal Protocol in 1989, Thailand had remained committed to complying with all the related obligations and amendments. In that regard, his Government had recently ratified the Kigali Amendment, and had already implemented a licensing system for HFCs that served to monitor its implementation and compliance with HFC consumption reduction obligations. Other proactive approaches had been taken to accelerate the phase-out of controlled substances, including through regulations to prohibit the use of CFCs in manufacturing and the banning of certain imports. In addition to eliminating the use of controlled substances under the Montreal Protocol, Thailand had also taken a long-term, multi-year approach to funding since the early 2000s, maximized climate benefits as incentives, and promoted innovative initiatives.

222. The achievement of the Kigali Amendment objectives presented a challenge, given the short time frame for Article 5 parties to start their phase-down activities, and the need to find a safe and efficient alternative to the use of refrigerants in cooling equipment. Thailand remained committed to tackling those challenges and would continue to explore innovative and sustainable approaches to that end through collaboration, in line with its national climate strategy and socioeconomic development goals.

C. Statement by the President of the twelfth meeting of the Conference of the Parties to the Vienna Convention

223. In his remarks, Mr. Sylla highlighted the work of the Ozone Research Managers of the Parties to the Vienna Convention, whose meetings were key to ensuring proper coordination of ozone-related research and monitoring programmes and the identification of gaps to be addressed. While the Vienna Convention and the Montreal Protocol were often hailed as the most successful multilateral environmental agreements, many knowledge gaps and uncertainties remained in the areas of observation, science and capacity-building, notably in developing countries and countries with economies in transition. The eleventh and twelfth meetings of the Ozone Research Managers had involved exploration of how to improve the global monitoring of ozone and enhance the global and

regional atmospheric monitoring of substances controlled under the Montreal Protocol. Such discussions had demonstrated, in very concrete terms, the interconnection between the work under the Vienna Convention and the Montreal Protocol. Scientific evidence of the link between the behaviour of the ozone layer and climate change had magnified the value of the work of the Ozone Research Managers, and thus the need for observations and analyses to be relevant to both areas wherever possible.

224. He expressed his gratitude to the members of the Bureau of the Vienna Convention and to the Advisory Committee of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention for its work and expertise in evaluating project proposals, with a view to ensuring optimal use of the modest resources of the Fund, in line with its long-term strategy and short-term action plan. The Fund should be enabled, through a substantial increase in funding and new collaborative efforts, to realize its full potential to strengthen systematic observations, especially in developing countries and countries with economies in transition, including for the monitoring of substances controlled under the Montreal Protocol. Meanwhile, parties to the Vienna Convention should implement the recommendations of the Ozone Research Managers, including on stronger links between ozone focal points and academia, relevant institutions from developing countries and relevant government and research bodies in developed countries, in order to foster scientific capacity-building.

D. Statement by the President of the Thirty-Fifth Meeting of the Parties to the Montreal Protocol

225. Ms. Rogović-Grubić said that, during the Thirty-Fifth Meeting of the Parties to the Montreal Protocol, the largest ever replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol had been delivered, of some $965 million for the triennium 2024–2026. That amount reflected both the recognition of the special circumstances of developing countries and the growing challenges associated with the simultaneous phase-out of HCFCs and phase-down of HFCs. The key issues for the next quadrennial assessment had also been identified, paving the way for more cutting-edge, policy-relevant information that would assist in addressing the challenges of implementing the Protocol. Actions had been requested from the Technology and Economic Assessment Panel, the Scientific Assessment Panel and the Ozone Secretariat, which had led to excellent responses at the forty-sixth meeting of the Open-ended Working Group of the Parties. That meeting had resulted in the significant advancement of discussions on several issues, auguring well for the probable adoption of important decisions by the Thirty-Sixth Meeting of the Parties, which would pave the way for future work. Such decisions should include guidance on regional atmospheric monitoring of substances controlled under the Montreal Protocol and on strengthening Montreal Protocol institutions.

226. All the achievements of the ozone treaties to date had been made possible by the hard work of the parties, the assessment panels, the Ozone Secretariat and the secretariat of the Multilateral Fund, as well as the Implementation Committee and the Executive Committee of the Multilateral Fund, together with its implementing and bilateral agencies. The trajectory of ongoing progress in the implementation of the Montreal Protocol could only be enhanced by universal ratification of the Kigali Amendment, which should be achieved by the tenth anniversary of that instrument, in 2026.

II. Organizational matters

A. Election of officers of the thirteenth meeting of the Conference of the Parties to the Vienna Convention

227. In accordance with paragraph 1 of rule 21 of the rules of procedure for meetings of the Conference of the Parties to the Vienna Convention, the following officers were elected, by acclamation, to the Bureau of the thirteenth meeting of the Conference of the Parties:

President:	Yaqoub Al-Matouq (Kuwait) (Asia-Pacific States)
Vice-Presidents:	Liana Ghahramanyan (Armenia) (Eastern European States)
	Sandrine Benard (Norway) (Western European and other States)
	Gilda María Torres (Paraguay) (Latin American and Caribbean States)
Rapporteur:	Beatrice Odwong Atim (Uganda) (African States)

B. Election of officers of the Thirty-Sixth Meeting of the Parties to the Montreal Protocol

228. In accordance with paragraph 1 of rule 21 of the rules of procedure for meetings of the parties to the Montreal Protocol, the following officers were elected, by acclamation, to the Bureau of the Thirty-Sixth Meeting of the Parties:

President:	Kerryne James (Grenada) (Latin American and Caribbean States)
Vice-Presidents:	Alain Wilmart (Belgium) (Western European and other States)
	Wan Abdul Latiff Wan Jaffar (Malaysia) (Asia-Pacific States)
	Ndiaye Cheikh Sylla (Senegal) (African States)
Rapporteur:	Claudia Dumitru (Romania) (Eastern European States)

C. Adoption of the agenda of the high-level segment

229. The following agenda for the high-level segment was adopted on the basis of the provisional agenda contained in document UNEP/OzL.Conv.13/1–UNEP/OzL.Pro.36/1, section II.

1. Opening of the high-level segment:
   (a) Statement by the President of the twelfth meeting of the Conference of the Parties to the Vienna Convention;
   (b) Statement by the President of the Thirty-Fifth Meeting of the Parties to the Montreal Protocol;
   (c) Statement by a representative of the United Nations Environment Programme.
2. Organizational matters:
   (a) Election of officers of the thirteenth meeting of the Conference of the Parties to the Vienna Convention;
   (b) Election of officers of the Thirty-Sixth Meeting of the Parties to the Montreal Protocol;
   (c) Adoption of the agenda of the high-level segment;
   (d) Organization of work;
   (e) Credentials of representatives.
3. Presentations by the assessment panels on the status of their work.
4. Report by the Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol on the work of the Executive Committee.
5. Statements by heads of delegation and discussion of key topics.
6. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol.
7. Dates and venues for the fourteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Seventh Meeting of the Parties to the Montreal Protocol.
8. Other matters.
9. Adoption of decisions by the Conference of the Parties to the Vienna Convention at its thirteenth meeting.
10. Adoption of decisions by the Thirty-Sixth Meeting of the Parties to the Montreal Protocol.
11. Adoption of the report of the thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol.

12. Closure of the meeting.

D. Organization of work

230. The parties agreed to follow their customary procedures.

E. Credentials of representatives

231. The bureaux of the thirteenth meeting of the Conference of the Parties to the Vienna Convention and of the Thirty-Sixth Meeting of the Parties to the Montreal Protocol approved the credentials of the representatives of 93 of the 144 parties represented at the meeting. The bureaux noted that the credentials of 76 of those 93 parties were originals, while 17 were copies that had been accepted on the understanding that originals would be submitted as soon as possible. The bureaux provisionally approved the participation of 51 parties on the understanding that they would forward their credentials to the Secretariat as soon as possible. The bureaux 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 for meetings of the Conference of the Parties to the Vienna Convention and of the rules of procedure for meetings of the parties to the Montreal Protocol. The bureaux also recalled that those rules of procedure required that credentials 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 bureaux further recalled that representatives of parties not presenting credentials in the correct form could be precluded from participating fully in the meetings of the parties, including with regard to the right to vote.

III. Presentations by the assessment panels on the status of their work

232. The Co-Chair of the Scientific Assessment Panel, David Fahey, gave a presentation on the work of the Panel. A summary of the presentation, prepared by the presenter, is set out in section C of annex I to the current report.

233. The Co-Chair of the Environmental Effects Assessment Panel, Janet F. Bornman, gave a presentation on the work of the Panel. A summary of the presentation, prepared by the presenter, is set out in section D of annex I to the current report.

234. The Co-Chair of the Technology and Economic Assessment Panel, Bella Maranion, gave a presentation on the work of the Panel. A summary of the presentation, prepared by the presenter, is set out in section E of annex I to the current report.

235. Responding to a question on efficient and safe alternatives to blowing agent HCFC-141b, Paulo Altoé, co-chair of the Flexible and Rigid Foams Technical Options Committee, said that water-blown agents were suitable for use in countries with high ambient temperatures, as were fourth-generation blowing agents, such as HCFC-1233zd, which, when used in small quantities and blended with water, had similar levels of stability and could therefore be used in remote areas. He noted, though, that the drum containing such a mixture, when transported to remote areas, should be suitably insulated and protected.

236. One representative said that Article 5 parties, in particular, would face growing challenges in the monitoring and control of HCFC-141b, including by customs services, as they currently lacked sufficient laboratory capacity for the necessary testing and envisaged that the demands for such testing would only increase once the ban on HCFC-141b came into force in 2025, when attempts to smuggle the substance into parties would likely increase.

237. In answer to a question on the availability of refrigerants with low global-warming potential that had proved to be efficient in countries with high ambient temperatures, Fabio Polonara, co-chair of the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee, said that HFC-32 and R-454b were suitable for conditioners with air-to-air systems, and R-513a and R-514a, among others, were suitable for water-to-air systems. Those alternatives had been successfully tested in various high-ambient temperatures, including in Egypt, Jordan and the United Arab Emirates. Regarding safety, he noted that R-454b, which had been widely adopted globally, had very low flame velocity and was therefore considered a safe refrigerant for domestic air conditioners and for packaged units for air-to-air systems.

238. In response to a request for updated information on halon 1301 and 1211, Dan Verdonik, co-chair of the Fire Suppression Technical Options Committee, said that the Committee was focusing on identifying the reasons for the higher-than-anticipated halon emissions, having ruled out the halon bank as a source of those emissions, and on investigating the issue of halon contamination. An update

on both issues would be provided in the progress report of the Technology and Economic Assessment Panel for 2026, if not earlier, and the Committee would also provide an updated predicted run-out date for halon 1301 and 1211. He also noted that the Technical Options Committee would be working with the Scientific Assessment Panel, as a matter of urgency, on investigating further the substantial difference between the atmospheric-based emissions estimates and the model estimates from the halon bank for halon 1211. It was vital to complete such work as soon as possible, as several alternatives to halon 1211 were no longer available, since they had been found to be ozone-depleting substances or per- and polyfluorinated alkyl substances (PFAS).

239. In response to questions on methyl bromide, Ian Porter, co-chair of the Methyl Bromide Technical Options Committee, said that the sources of about 10,000 tons of methyl bromide emissions remained unknown. Regarding new information, he said that the Committee had received a detailed paper from experts in China on methyl bromide emissions in the country for the period 2011–2021, in which consistent, significant increases in emissions had been identified in densely populated areas in the country, but the nature of the source, namely whether natural or anthropogenic, had not been identified. As the paper had only been received on 16 October 2024, the Scientific Assessment Panel and the Technology and Economic Assessment Panel had not yet carried out a full analysis and would therefore report to parties on their findings at a suitable opportunity.

240. Regarding a request for clarification from one representative on the information presented on alternatives to controlled substances, including some breakdown products, that could be considered PFAS, Ms. Bornman said that she would contact the representative directly to discuss the issue. She also noted that the three panels continued to discuss ways of removing the inconsistencies that persisted with regard to PFAS and informed parties that the panels would be contributing to discussions at a meeting of the International Union of Pure and Applied Chemistry in 2025 regarding producing a harmonized definition of PFAS.

241. One representative underscored that PFAS, also known as “forever chemicals”, were of great concern, as the full extent of their effects on human health and the environment were unknown and increasing levels of concentration of the substances were being found, for example in fresh water. She noted that her country, in the same way as was done by countries in the European Union, had adopted a precautionary approach to PFAS and was considering perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) separately from other PFAS. In order to avoid inadvertently creating any new environmental problems, parties should be encouraged, when developing their national plans for HFC phase-down, to carefully assess the environmental and climate effects of any alternatives to HFCs. She also recalled that, in decision XXV/3, the panels had been requested to keep the parties abreast of any new research on the topic of PFAS, and she looked forward to receiving updated information in the coordinated report in 2026.

242. In response to a query on trifluoroacetic acid, Ms. Bornman agreed that more research needed to be carried out on the effects of chronic exposure to the substance but noted that the fact that it was not possible to carry out such research on humans presented significant challenges. She drew attention to the increasing level of research based on monitoring of the substance that was being carried out in China, including regarding trifluoroacetic acid as a byproduct of certain industries.

243. One representative, speaking on behalf of a group of parties, warmly welcomed the information that lower-global-warming-potential pressurized metered-dose inhalers might be available from 2026.

244. The parties took note of the information presented.

IV. Report by the Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol on the work of the Executive Committee

245. The Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol, María Antonella Parodi, reported on the work of the Executive Committee, the Multilateral Fund secretariat and the implementing agencies of the Fund since the Thirty-Fifth Meeting of the Parties, summarizing the information set out in document UNEP/OzL.Pro.36/8. Her statement is set out in annex II to the present report.

246. The parties took note of the information presented.

V. Statements by heads of delegation and discussion of key topics

247. During the high-level segment, statements were made by the heads of delegation or their representatives of the following parties: Angola, Cambodia, China, Cuba, Ecuador, Eswatini, Ethiopia, European Union, Gabon, Gambia, Grenada, Guinea, Indonesia, Iran (Islamic Republic of), Kenya, Malaysia, Maldives, Micronesia (Federated States of), Myanmar, Peru, Philippines, Russian Federation, Senegal, Somalia, South Africa, Timor-Leste, Tunisia, Türkiye, Uganda, Ukraine, United Republic of Tanzania, United States of America (speaking in part also on behalf of Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United Kingdom), Venezuela (Bolivarian Republic of) and Viet Nam. Statements were also delivered by the representatives of the International Institute of Refrigeration, the Environmental Investigation Agency and the children and youth major group.

248. All the representatives of parties who spoke expressed their gratitude to the Government and people of Thailand for their warm welcome and hospitality. They also expressed their appreciation for the untiring work of the Ozone Secretariat and the bureaux, the secretariat and the Executive Committee of the Multilateral Fund, UNEP, the implementing agencies, donor partners, the assessment panels, international organizations and other stakeholders in ensuring the success of the current meeting and of the Montreal Protocol more broadly.

249. Many representatives expressed their continued commitment to the goals of the Montreal Protocol, which, they said, had proven to be an extraordinary instrument, arguably the most successful multilateral environmental agreement in existence. Hard and sustained work by its parties had delivered tangible results: the phasing out of 98 to 99 per cent of the production and consumption of ozone-depleting substances, an ozone layer now firmly on the path to recovery, significant reductions in emissions of greenhouse gases and a major stimulus to sustainable industrial production and consumption. The Protocol had fostered positive cooperation between developed and developing countries in accordance with the principle of common but differentiated responsibility. It remained a beacon of hope, a powerful example of a successful collective response to a global environmental threat.

250. As one representative observed, the following three years would mark the fortieth anniversaries of the Vienna Convention and the Montreal Protocol, and the tenth anniversary of the Kigali Amendment. It would be right to celebrate those milestones, but parties must use the occasions to assess what more needed to be done, building on past successes for the benefit of future generations.

251. Many representatives described the actions continuing to be taken in their own countries, with assistance from the Multilateral Fund and the implementing agencies, to phase out ozone-depleting substances, implement the stages of their HCFC phase-out management plans and achieve compliance with the provisions of the Protocol, including through legislative, policy, institutional and programmatic measures. Several representatives said that they were proud to announce their achievement of phase-out targets for HCFCs and methyl bromide ahead of the deadlines set by the Protocol, and their plans for the accelerated phase-down of HFCs. One representative said that the institutional strengthening support provided through the Multilateral Fund had proved indispensable.

252. A wide range of specific activities were outlined, including industrial conversion projects, support for the servicing sector, the certification and training of technicians and the provision of new equipment for them, the establishment of new centres and laboratories for refrigeration and air-conditioning technologies and practices, collaboration with key stakeholders, including industry associations and universities, and public awareness campaigns. The holistic framework of institutions, laws and regulations, and trade controls, including import bans on specific substances and equipment, was crucial. Illegal trade, in both substances and equipment, remained a challenge for many countries, but was being tackled through the training of customs officers and the provision of chemical identifiers, and by fruitful collaboration and exchanges of information between countries.

253. Several representatives commented on the positive impacts on the economy generated by those activities, including the creation of new jobs and investment and support for innovation and improvements in industrial competitiveness. Some applauded the record level of replenishment of the Multilateral Fund that had been agreed in 2023, and representatives of non-Article 5 parties expressed their continued support for it. Some representatives highlighted their work to ensure social inclusion and equity through their Montreal Protocol activities, ensuring that marginalized groups benefited and that a fairer and more resilient society resulted. Specific activities included encouraging women technicians to join training programmes and providing scholarships and training aimed at young people. The representative of the children and youth major group stressed the importance of the greater participation of young people in decision-making forums. He called for the attribution to his major group of a dedicated seat at future meetings of the Conference of the Parties to the Vienna

Convention and the meetings of the parties to the Montreal Protocol, and the voluntary allocation of additional resources in support of that participation.

254. Many representatives highlighted the importance of the Montreal Protocol for combating climate change in the face of the increasingly devastating impacts, including storms, floods, wildfires, heatwaves, droughts and coastal erosion, among much else; 2024 was likely to prove one of the hottest years in human history. For many small island developing States, climate change threatened their very existence. The need for a comprehensive response had never been more urgent. Several representatives highlighted how the strategies their countries had developed in response to the Montreal Protocol were already contributing to their national climate strategies and their nationally determined contributions under the Paris Agreement on climate change.

255. In that respect, the Kigali Amendment to the Montreal Protocol was critical, offering the opportunity of preventing a temperature rise of up to 0.5°C by the end of the century. Many representatives announced their pride in the fact that the Amendment had so far attracted 160 ratifications; several called on those parties that had not yet ratified it to do so, and others announced that their countries were in the process of ratification. One representative expressed the hope that the Amendment would achieve universal ratification by 2026, its tenth anniversary.

256. Several representatives highlighted the importance of the year 2024 as the date by which most Article 5 parties should have frozen their HFC production and consumption at baseline levels, and expressed the hope that the subsequent phase-down targets would be achieved ahead of schedule. They said that they expected technological innovation to offer unprecedented opportunities, as it had in the past, and countries would be able to rely on the institutions and capacity they had developed to deliver the phase-out of HCFCs.

257. Many representatives described the activities they were already undertaking to phase down HFCs, often in the context of Kigali HFC implementation plans approved by the Executive Committee of the Multilateral Fund. Specific activities included enhancing the capacity of key stakeholders, particularly technicians, providing training and equipment to help them install and maintain sustainable cooling solutions, introducing new product and equipment standards and labels, including for HFCs in the local carbon market, extending national import and export licensing systems to cover HFCs, preventing imports of energy-inefficient refrigeration and air-conditioning equipment, and promoting alternatives to high-GWP substances, including in particular natural refrigerants. Regional collaboration, for example in workshops and demonstration projects, had proved helpful. Some representatives, however, highlighted continuing challenges in developing or accessing satisfactory alternatives for all uses, including for reasons of their cost.

258. Many representatives highlighted the synergy between measures to promote energy efficiency and achieving the goals of the Kigali Amendment and the climate agreements, reducing the need both for refrigerants and fossil fuel consumption for energy. Several representatives described their national efforts, such as the introduction of minimum energy performance standards for cooling equipment or interministerial coordination mechanisms. Some stressed the utility of the twinning workshops for national ozone officers and national energy-efficiency policymakers, organized under the OzonAction programme. One representative also welcomed the decision of the Executive Committee of the Multilateral Fund to establish an initial $100 million window for the refrigeration and air-conditioning manufacturing sectors in the Fund's energy efficiency operational framework.

259. Similarly, efforts to reclaim, recycle and reuse refrigerants were essential; if HFCs could be kept within the equipment using them they would not reach the atmosphere and contribute to climate change. One representative stressed the importance of recovering end-of-life ozone-depleting substances wherever possible as opposed to destroying them, despite the possibility, for example, of earning carbon credits for doing so. Another representative described the reclamation, recycling and reuse of refrigerants as an evolutionary step in the development of the Montreal Protocol, embedding the concept of the circular economy. Many representatives called for further activities such as opening reclamation centres for high-GWP refrigerants, training technicians in the safe management of the substances throughout their life cycle and recovery and disposal at end of life, and conducting inventories of banks and equipment. Several representatives drew attention to the successful workshop on life-cycle refrigerant management held by the Ozone Secretariat just before the current meeting.

260. Despite the successes of the Montreal Protocol, many representatives drew attention to continued challenges, including insufficient financial support, limited national capacities, restricted access to low-GWP technologies, an absence of the infrastructure needed for reclamation, recycling and end-of-life management, and continued problems with illegal imports. Given the growing demand for cooling, investment in, and the transfer of, energy-efficient low-GWP-refrigerant-using cooling technologies was essential, along with support for the servicing sector, training of customs officials

and stronger sanctions for those engaged in illegal trade. Some key stakeholders, including consumers and industry, were still insufficiently engaged; public awareness-raising campaigns were needed. Representatives called in particular for continued international cooperation and support to enable their countries to realize the opportunities and rise to the challenges. One representative of an observer confirmed her organization's commitment to providing independent support and capacity-building in refrigeration matters and to ensuring a link between the providers and users of scientific evidence for informed decision-making.

261. A number of representatives called for greater support for the expansion of atmospheric monitoring sites. One representative recalled how atmospheric monitoring had detected unreported emissions of CFC-11 in 2018, enabling parties to take action, and emissions had fallen. More recently, a similar problem seemed to have emerged with unreported emissions of HFC-23, which had reached a level, in 2019, of 200 million tonnes of CO_2-equivalent emissions. He expressed the hope that parties would again take action and drew attention to the proposal for a draft decision on emissions of HFC-23 that was being discussed. A representative of an observer also expressed her organization's concern about unreported, unaccounted for and unexpected emissions of ozone-depleting substances. She said that the problem could be mitigated by better monitoring, the use of alternative feedstocks and life-cycle refrigerant management. A number of representatives called for more extensive monitoring of substances not controlled by the Montreal Protocol, but which nevertheless damaged the ozone layer, such as nitrous oxide (N_2O). Since that was now the largest threat to the ozone layer, they expressed the view that it needed further consideration by the parties to the Montreal Protocol and the hope that it could be discussed by the following meeting of the parties.

262. One representative called for the development of alternatives to carbon tetrachloride used as chemical feedstock; even though it depleted the ozone layer and was a powerful greenhouse gas and was toxic, its use as feedstock was allowed under the Montreal Protocol. Other representatives emphasized emerging concerns over PFAS, or "forever chemicals", given the risks they posed to the atmosphere and human health risk. Another representative highlighted the need to develop ozone-friendly and climate-friendly and safe alternatives for metered dose inhalers.

263. Several representatives observed that the wider economic and geopolitical outlook was very challenging. The world economy was weaker than it had been, and several countries had still not recovered from the impacts of the coronavirus disease (COVID-19) pandemic. Ongoing armed conflicts posed threats to international cooperation.

264. In that context, the representatives of the European Union and the United States, speaking also on behalf of Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United Kingdom, condemned the unprovoked invasion of Ukraine by the Russian Federation, which, they said, was not only a violation of the Charter of the United Nations but an action which had led to negative and irreversible impacts on the environment. The representative of Ukraine drew attention in particular to the destruction of refrigeration and air-conditioning systems, which had contributed to an estimated 180 million tonnes of CO_2-equivalent emissions of greenhouse gases caused by military operations on his country's territory for the two years from February 2022. Although there could be no effective climate policy without peace, he said that Ukraine would continue to fulfil its commitments under the Montreal Protocol. Speaking in exercise of the right of reply to the statements made by the representatives of the European Union, Ukraine and the United States, speaking also on behalf of Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United Kingdom, the representative of the Russian Federation condemned the inaccurate statements made about her country and reminded representatives that the current meeting and other multilateral platforms were not places for one-sided accusations.

265. In conclusion, representatives expressed their belief that the Montreal Protocol was one of the strongest multilateral environmental agreements, possibly the most effective one, but its parties needed to continue to work together to meet the continued challenges it faced. The Montreal Protocol was a model of global environmental cooperation; it gave hope for addressing other environmental challenges, achieving the Sustainable Development Goals and ensuring the future habitability of the planet.

VI. Report by the co-chairs of the preparatory segment and consideration of the decisions recommended for adoption by the Conference of the Parties to the Vienna Convention at its thirteenth meeting and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol

266. The Co-Chair of the preparatory segment reported that the work of the segment had concluded successfully and draft decisions had been approved for consideration and possible adoption during the high-level segment. He expressed gratitude to all concerned for their hard work and for the spirit of cooperation and compromise that had enabled agreement to be reached on such a large number of draft decisions.

VII. Dates and venues for the fourteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Seventh Meeting of the Parties to the Montreal Protocol

267. The representative of Kazakhstan announced the intention of his Government to submit to the Secretariat a formal offer to host the Thirty-Seventh Meeting of the Parties, in November 2025. He recalled that his country, as a responsible member of the global community, strove to contribute to achieving shared goals enshrined in climate-related treaties by, among other things, implementing a strategy to achieve carbon neutrality at the national level by 2060, and setting goals to reduce greenhouse gas emissions in the country by 50 per cent, and by 25 per cent of the 1990 level, by 2030. Kazakhstan was also in the process of ratifying the Kigali Amendment.

268. The President of the thirteenth meeting of the Conference of the Parties to the Vienna Convention, expressing thanks to the representative of Kazakhstan, said that the Thirty-Seventh Meeting of the Parties to the Montreal Protocol would be convened from 3 to 7 November 2025 in Nairobi unless other appropriate arrangements were made by the Secretariat in consultation with the Bureau. In addition, it was proposed that the fourteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and the Thirty-Ninth Meeting of the Parties be held back to back, in 2027. Draft decisions on the matter were set out in document UNEP/OzL.Conv.13/3–UNEP/OzL.Pro.36/3 (draft decisions XIII/[B] and XXXVI/[FF]) and would be updated accordingly.

269. He also informed the parties that the forty-seventh meeting of the Open-ended Working Group was scheduled to be held in Bangkok from 7 to 11 July 2025.

270. The parties took note of the information provided.

VIII. Other matters

271. No other matters were considered during the high-level segment.

IX. Adoption of decisions by the Conference of the Parties to the Vienna Convention at its thirteenth meeting

272. The thirteenth meeting of the Conference of the Parties to the Vienna Convention adopted the decisions approved during the preparatory segment, as set out in document UNEP/OzL.Conv.13/8/Add.1–UNEP/OzL.Pro.36/9/Add.1.

X. Adoption of decisions by the Thirty-Sixth Meeting of the Parties to the Montreal Protocol

273. The Thirty-Sixth Meeting of the Parties adopted the decisions approved during the preparatory segment, as set out in document UNEP/OzL.Conv.13/8/Add.1–UNEP/OzL.Pro.36/9/Add.1.

XI. Adoption of the report of the thirteenth meeting of the Conference of the Parties to the Vienna Convention and the Thirty-Sixth Meeting of the Parties to the Montreal Protocol

274. The parties adopted the current report on Friday, 1 November 2024, on the basis of the draft report that had been circulated. The Presidents, with the assistance of the Ozone Secretariat, were entrusted with the finalization of the report.

XII. Closure of the meeting

275. Following the customary exchange of courtesies, the meeting was declared closed at 9.45 p.m. on Friday, 1 November 2024.

Annex I

Summaries of presentations by members of the assessment panels and technical options committees*

A. Presentation on the Scientific Assessment Panel response to decision XXXV/7: emissions of HFC-23

1. The Scientific Assessment Panel (SAP) of the Montreal Protocol made a presentation at the 36th Meeting of the Parties titled: "Report of the Scientific Assessment Panel Response to Decision XXXV/7: Emissions of HFC-23". The presentation highlighted the Executive Summary text of a report submitted by the SAP in advance of the 36th MOP, together with figures that supported those summary conclusions. The presentation included a description of the new and newly updated scientific information on HFC-23 that had become available subsequent to the 2022 Science Assessment Panel Report, which included updated atmospheric measurements, derived emissions, and upper limits to amounts produced from atmospheric oxidation. These atmosphere-measurement-derived results were considered relative to available reporting-based emissions and expectations on global and regional scales, based on close consultation with the Technology and Economic Assessment Panel (TEAP) and information from the Ozone Secretariat and the secretariat of Multilateral Fund for the Implementation of the Montreal Protocol. The results reaffirm a substantial gap in atmosphere-derived emissions of HFC-23 relative to reporting-based estimates on both of these scales.

B. Presentation on the Technology and Economic Assessment Panel response to decision XXXV/7 on emissions of HFC-23

2. Ms. Helen Tope, co-chair of the Medical and Chemical Technical Options Committee (MCTOC), on behalf of the Technology and Economic Assessment Panel and its Medical and Chemical Technical Options Committee, presented TEAP's response to decision XXXV/7 on emissions of HFC-23. She recalled that paragraph 2 of decision XXXV/7 requested TEAP to report to this meeting on the quantity of HFC-23 being consumed, by country and by sector, and on updated estimates on the amounts of HFC-23 generated at and emissions from HCFC-22 production facilities; and that paragraph 5 of the decision invited parties to provide information to the Panels that may help inform the reports but that no information was provided. She noted that the TEAP report updated information in the 2022 MCTOC Assessment Report and the 2023 TEAP Response to decision XXXIV/7 on strengthening institutional processes with respect to information on HFC-23 by-product emissions.

3. She explained that the Medical and Chemical Technical Options Committee led the preparation of the report on behalf of the TEAP and collaborated closely with the Scientific Assessment Panel and other TEAP experts. She further explained that for additional context, consistent with previous reports, updated information was provided on other HFC-23 emissions from consumptive and emissive uses of HFC-23. She noted that there are several chemical mechanisms that can generate HFC-23 as a by-product in chemical production processes, and that the quantity of by-product generated is greater than the amount of HFC-23 required for use as feedstock or for other consumption. She recalled that parties to the Kigali Amendment are required to destroy HFC-23 generated as a by-product of HCFC-22 production to the extent practicable using a destruction technology approved by the Montreal Protocol. She noted that the operation and maintenance of incineration facilities to destroy HFC-23 by-product is a cost to the companies responsible for its generation, particularly as HCFC-22 is a low profit margin product. In response to paragraph 2(a) of decision XXXV/7 on the quantity of HFC-23 being consumed, by country and by sector, she noted that information on consumption is not always readily available to the level of detail requested in the decision by country and by sector. She further noted that HFC-23 consumption and feedstock use data are not available for all parties due to the timing of reporting obligations associated with ratification of the Kigali Amendment although that some data are available from other sources relating to the quantities used for each of the applications. She explained that HFC-23 is consumed as a feedstock and in very small quantities in emissive uses for fire suppression, very low temperature refrigeration, and semiconductor and electronics manufacturing. She noted that several parties that manufacture Annex C, Group I and/or Annex F substances capture the HFC-23 that is generated for feedstock and/or emissive uses, divert it for destruction, or alternatively, parties could produce HFC-23 separately for feedstock or emissive uses.

* The summaries are presented as received, without formal editing.

She said that reported HFC-23 consumption was about 2,600 tonnes for non-feedstock uses for fire protection, ultra-low temperature refrigeration, and semiconductor and electronics manufacturing, and about 1,100 tonnes for feedstock uses in 2022.

4. In response to paragraph 2b of decision XXXV/7 regarding updated estimates on quantities of HFC-23 generated at, and emissions from, HCFC-22 production facilities, she explained the methodology and information used by MCTOC. She elaborated that Article 7 data was used for the quantities of HCFC-22 production and HFC-23 emissions, as reported by parties under mandatory obligations. She noted that the timing of obligations impacted completeness of HFC-23 emissions data, which was supplemented with reported UNFCCC data for the United States. She noted that data on quantities of HFC-23 generated from HCFC-22 production are reported by parties on a voluntary basis and were not published by party in this report, and further that HFC-23 generation data are not reported by all parties known to produce HCFC-22. She explained that, therefore, MCTOC applied estimated HFC-23 by-product generation rates to Article 7 reported HCFC-22 production quantities to estimate HFC-23 by-product generation quantities. She summarised that total HCFC-22 production reported under Article 7 was about 1,197,000 tonnes, estimated HFC-23 by-product generation from HCFC-22 production was in the range of about 18,000 to 36,000 tonnes, consistent with the HFC-23 generation data reported by parties on a voluntary basis, and total HFC-23 emissions from HCFC-22 production reported under Article 7 and UNFCCC for the United States was about 836 tonnes. She added that, for additional context, TEAP provided updated estimates of global HFC-23 emissions from known emissions sources, as previously presented in the September 2023 TEAP Report in response to decision XXXIV/7. She noted that some of these were broad estimates where further information to improve their accuracy is currently not available. She explained that TEAP estimates HFC-23 emissions from known emissions sources to be about 1,470–3,540 tonnes per year in recent years, which excludes the SAP estimate of less than 430 tonnes per year for the potential additional source of HFC-23 from atmospheric oxidation. She noted that, by comparison, SAP reports estimated global HFC-23 emissions of 13,900 ± 700 tonnes for 2022 based on atmospheric observations. She summarised the conclusions by noting the large difference between TEAP and SAP estimates of global HFC-23 emissions.

5. She noted that uncertainties in atmospheric-derived estimates could not explain the difference between SAP and TEAP estimates, and that the differences could not currently be explained with the data reported under Article 7 and other sources. She noted that TEAP had identified all the major sources likely to contribute most of the HFC-23 emissions. She recalled that, in terms of the more significant HFC-23 sources, around 95% of estimated total global HFC-23 by-product generation is from HCFC-22 production and a major portion of TEAP's estimate of total HFC-23 emissions comes from data reported under Article 7 of the Montreal Protocol and the UNFCCC for HFC-23 emissions predominantly from HCFC-22 production. She explained that uncertainties in TEAP estimates of HFC-23 emissions from relatively smaller known sources other than HCFC-22 production are unlikely to bridge the difference between TEAP and SAP estimates. She also explained that any unknown smaller sources are unlikely to bridge the large difference between TEAP and SAP estimates. She concluded that there are unknowns and uncertainties surrounding Article 7 data reporting for HFC-23 emissions, including how facilities are measuring and reporting HFC-23 emissions, and that given the large difference between TEAP and SAP estimates, the question arises whether the data is accurate and/or have been combined from all the sources required under Article 7. She suggested that consideration of approaches used by parties when measuring and reporting HFC-23 emissions might address some of the current unknowns and uncertainties and that the refinements to data form 6 might help address some of these issues. In concluding, she recommended that parties may wish to consider refinements to the reporting of HFC-23 emissions.

C. Presentation by the Scientific Assessment Panel on the 2026 World Meteorological Organization/United Nations Environment Programme scientific assessment of ozone depletion

6. The Scientific Assessment Panel (SAP) (co-chairs Lucy Carpenter, David Fahey, Ken Jucks, Bonfils Safari and Steve Montzka) of the Montreal Protocol made a presentation at the high-level segment of the 36th Meeting of the Parties titled: The 2026 WMO/UNEP Scientific Assessment of Ozone Depletion. The presentation began with perspectives on the relationship of the SAP to other international research organizations involved in ozone research and on the long history of policy support from the ozone assessment reports. The update concerning the planning for the 2026 report included Terms of Reference from the parties, proposed chapter titles, and tentative timeline for completion. Additional comments were made about the value of the interim reports on HFC-23 and very short-lived substances; the plans to update the Annex and the 20 Questions and Answers booklet;

and the Chinese translation of the 20 Questions and Answers booklet. Finally, an update was provided on the status of the 2024 Antarctic ozone hole.

D. Presentation by the Environmental Effects Assessment Panel on the environmental effects of stratospheric ozone depletion, ultraviolet radiation and interactions with climate change

7. On behalf of the Environmental Effects Assessment Panel and co-chair Paul Barnes, co-chair Janet Bornman presented the 2024 Update Assessment on the environmental effects of stratospheric ozone depletion, UV radiation, and interactions with climate change.

8. Highlights from the Update included modelling studies that continue to show the benefit of the Montreal Protocol in preserving the stratospheric ozone layer and protecting the climate, with respect to projected precipitation, drought, and high temperatures that would have occurred without the Montreal Protocol. Potential effects were also presented of stratospheric aerosol injection (SAI) one type of climate intervention that has been suggested for temporarily reducing global warming by reflecting radiation away from the Earth's surface. It was noted that modelling studies show large uncertainties with respect to effects of SAI on the biosphere and many unintended consequences are likely but difficult to assess.

9. Some of the alternatives to the ozone-depleting substances (ODS) under the purview of the Montreal Protocol are the per- and polyfluorinated alkyl substances (PFAS), including those ODS that degrade to produce PFAS. There is a clear need to better understand the effects of the many thousands of compounds that are included under the umbrella definitions of the per- and polyfluorinated alkyl substances (PFAS). Several current efforts to define which chemicals are considered as PFAS are based on chemical structure but do not consider inherent individual differences in toxicity, bioaccumulation, and persistence in the environment.

10. Further studies of the potential effects in humans of trifluoroacetic acid (TFA) in water have been carried out on laboratory animals. Data were adjusted to account for differences in body weight. Results showed that chronic exposure to TFA salts in water continues to be a de minimis risk. However, continued monitoring and experimental study are still needed.

11. Effects on the environment included the breakdown (photodegradation) of plastics by UV radiation and climate factors. UV radiation plays a significant role in degrading plastics into very small particles (micro- and nanoplastics) that are easily taken up by ecosystems, humans, and other animals. The additives incorporated into plastics was raised as another concern based on the toxicity of many of these additives, since they too are released into the environment following plastic breakdown.

12. A Canadian national study on the incidence of melanoma in humans and a warming climate found that an increase of 1.5 ^{0}C was associated with a 26% increase in the expected number of melanoma cases for a region. Factors taken into account for this study included average temperature and daily UV radiation during summer months.

13. The presentation concluded with the contributions of the Montreal Protocol to many of the Sustainable Development Goals.

E. Presentation by the Technology and Economic Assessment Panel on progress in its work

14. Ms. Bella Maranion provided an update on the progress of work and emerging issues of the Technology and Economic Assessment Panel (TEAP). Ms. Maranion highlighted the TEAP membership in 2024, noting that, currently, the TEAP consists of 21 members: three co-chairs, five senior experts, and 13 co-chairs of the five Technical Options Committees (TOCs) including the Flexible and Rigid Foams Technical Options Committee (FTOC), Fire Suppression Technical Options Committee (FSTOC), Methyl Bromide Technical Options Committee (MBTOC), Medical and Chemicals Technical Options Committee (MCTOC), and Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee (RTOC). She noted that there are over 150 experts serving on TEAP, its TOCs, and temporary subsidiary bodies (e.g., Task Forces) on a voluntary basis. She expressed appreciation for their commitment and service, for the ongoing support of parties for their experts, and also for the continued support of the Ozone Secretariat to the work of the TEAP.

15. Ms. Maranion then provided an overview of the TEAP's changing scope and workload including the overlap of the ODS phaseout and HFC phasedown regimes, Kigali Amendment issues (e.g., HFC alternatives, energy efficiency, lifecycle refrigerant management (LRM)). She noted that standing decisions already provide opportunities for regular updates and reports for the TEAP to

provide to parties, including the Annual Progress Report, Quadrennial Assessment, Quintennial HFC alternatives assessment, Replenishment Report, Periodic High Ambient Temperature (HAT) exemption review, critical use nominations (CUNs), essential use nominations (EUNs), uses of n-propyl bromide (nPB), review of destruction technologies, laboratory and analytical uses, and use of process agents. She noted that TEAP also reports on emerging issues (e.g., CFC-11, PFAS, very short-lived substances (VSLS), vaccine cold chain, HFC-23) as needed.

16. Ms. Maranion reported that in 2024, TEAP produced three major new reports, plus responses to five separate decisions requesting updates to information which TEAP had provided recently. She provided an overview of planned reports in 2025 and 2026, including the TEAP Quadrennial Assessment Report. She noted that in 2025, a progress report would be due, including a response to decision XXXV/20 "Options for the organization of TEAP and its TOCs", in concert with other ongoing activities including replenishment planning, modelling updates, coordination with Panels, etc. In 2026, 9-11 reports will be finalised and published including the progress report, the quadrennial assessment, the study on replenishment of the Multilateral Fund, and 2027 reports will be developed, including the Synthesis and HFC alternatives reports.

17. Ms. Maranion next relayed decision XXXV/3 providing the terms of reference for the TEAP quadrennial assessment. In this decision, parties requested the TEAP to assess and evaluate 11 topics including technical progress in the production and consumption sectors in the transition to alternatives for controlled substances in all sectors, process agents and feedstock uses, an assessment of information relating to emissions of controlled substances from feedstock and production processes and other manufacturing processes, status of banks and stocks of controlled substances, challenges facing all parties to the Montreal Protocol in implementing obligations under the Protocol and maintaining the phase-outs already achieved, the impact of the phase-out of ODS and the phasedown of HFCs on sustainable development, technical advances in developing alternatives to HFCs taking into account, in particular, energy efficiency, safety, and suitability for use in high-ambient-temperature countries, information on uses where HCFCs were not previously used and HFCs have been used and are currently used, such as electronics manufacturing, assessment of whether production of HFOs results in fugitive emissions of HFCs, potential impacts of evolving policies and regulations (e.g., on PFAS) in relation to the management of controlled substances and their alternatives and breakdown products, and information on refrigerant management, with particular attention to leakage prevention and end-of-life management.

18. Ms. Maranion then described ways that TEAP continues to evolve, explaining that TEAP is aware of the need to ensure that its membership meets the evolving needs of parties whilst ensuring continuity of its work. Ms. Maranion noted that TEAP is undertaking discussions on its future directions and needed structure and membership. She explained that TEAP looks to the continuing support of parties as the panel works to maintain expertise, evolve its processes, manage its overall workload, and continue to deliver its work for the benefit of parties and to identify experts based on its matrix of needed expertise and ensure that those experts are able to fully participate in the activities and work of the TEAP and its TOCs for parties (i.e., funding travel expenses where needed).

19. Ms. Maranion then provided updates from the TOCs starting with foams, first commenting on the substantial and continued progress in the adoption of zero ODP and low GWP foam blowing agents (FBAs) for most foam types. She explained that all previously used HFCs, except HFC-152a, are no longer allowed for use in foams in almost all non-Article 5 parties and many companies have elected to transition away from fluorinated FBAs due to cost, if thermal performance can still be met. She further detailed that the supply chain recovery continues for FBAs and other raw materials including easing of olefin imbalances, in both Article 5 and non-Article 5 parties, due to capacity increases. In contrast, she said that there was higher than expected demand for pentanes which challenged availability in some cases, and the HFC-365mfc plant closure in 2023 had created issues for companies in Article 5 parties, and that there has been continued use of HFC-245fa blends in Article 5 parties due to cost of HFO/HCFO alternatives.

20. She went on to describe health and safety considerations of new FBAs explaining that flammable FBAs and FBAs with different toxicity create additional safety concerns for end-users and for foam industry workers, especially in small- and medium-sized enterprises (SMEs). Specifically, the long-term exposure and toxicity of 1,2 dichloroethylene (1,2-DCE) after installation of spray foam is under review by at least one party using indoor air quality studies related to spray foam, showing 1,2-DCE concentrations for months or years after installation. She noted that hydrocarbons are being tested as FBAs for spray foam in some A5 parties; although FTOC is unaware of any broad commercial use, it is seeking additional information about safety measures in use to address exposure and safety risks, especially by SMEs.

21. Ms. Maranion then provided an update on the progress of fire suppression sector, commenting that no new alternatives are reported in development. Civil aviation has not approved an alternative for cargo compartments and engine nacelles. Part of this is due to the uncertainty surrounding the PFAS issue, as the leading contender for cargo compartments contains a component that some define as a PFAS. All enduring uses, including civil aviation, still depend on the ever-declining bank of Halon 1301, i.e., a reclaimed agent. Recent indications are that some of the Halon 1301 recovered does not meet the required purity standard, that is it must be 99.6% pure. Although it is possible to reclaim the halon back to the required purity, some Halon is lost during reclamation. Also, higher levels of impurity mean that successively more Halon is lost. In some case the halon might not be recoverable and is destroyed. The FSTOC and industry stakeholders are assessing the potential impact. Finally, she noted that the FSTOC would like to remind parties that destruction of Halon 1301 for carbon credits will further deplete the bank.

22. She continued discussing emerging issues from FSTOC noting that emissions of Halon 1301 derived from atmospheric measurements (NOAA and AGAGE) are greater than those predicted by the FSTOC halon bank model. She explained that for at least the period 2004–2021, these increases in emissions match the timing and pattern of reported Halon 1301 production for feedstock use. She clarified that FSTOC ruled out other possible sources, only leaving feedstock production and use, and that from reported feedstock production, applying a 26% overall emission factor (for production and use) appears to explain the additional Halon 1301 emissions. She concluded that parties may wish to consider providing information on emissions from feedstock use.

23. Ms. Maranion then discussed methyl bromide (MB) updates. First, she announced the significant milestone that in 2024, over 99.9% of the 62,000 t of MB used for controlled uses (i.e., non-QPS) is reportedly phased-out. She continued, stating that the current focus of MBTOC is on alternatives for MB used for quarantine and pre-shipment (QPS) purposes (8,000 to 10,500 t per year) noting that technically and economically feasible alternatives are currently available for about 40% of such uses and some countries already are achieving major reductions in QPS use. Ms. Maranion then noted the concern that reports and websites identify that substantial MB is still being used for unreported controlled use (non-compliance) and that enforcing policies to ensure MB is only used for its intended use, including Quarantine (Q) MB use is only for quarantine pests or pre-shipment (PS) use only for ´officially endorsed´ control of cosmopolitan pests, and only within 21 days before export.

24. Ms. Maranion then discussed emerging issues from the medical and chemicals sector first noting that pressurised metered dose inhalers (pMDIs), dry powder inhalers (DPIs), aqueous soft mist inhalers (SMIs), and other delivery systems, such as nebulisers, all play a role in the treatment of asthma and chronic obstructive pulmonary disease. She stated that the development of lower GWP pMDIs with lower GWP propellants HFC-152a and HFO-1234ze(E) is progressing, although potential challenges could risk the consistent supply of affordable medicines. She noted that the development is a complex process involving new ways of manufacturing, new clinical trials, and new regulatory approvals, detailing that 3 manufacturers have registered clinical studies for 3 inhalers, due to be completed in 2025, a further 10 or more companies could have active programmes to develop pMDIs, and that with subsequent regulatory submissions/approvals, the first lower GWP pMDIs may not reach the market until 2026.

25. MCTOC led TEAP's response to decision XXXV/7 which requested TEAP to prepare a report for MOP36 containing information on the quantity of HFC-23 being consumed, by country and by sector, and updated estimates on the amounts of HFC-23 generated at and emissions from HCFC-22 production. MCTOC reported HFC-23 consumption which was 3,684.3 tonnes (2022) with 2,614.3 tonnes for non-feedstock uses and 1,070 tonnes for feedstock use. She noted that the estimated HFC-23 by-product generation from HCFC-22 production is in the range of about 18,000 to 36,000 tonnes and that total HFC-23 emissions from HCFC-22 production reported under Article 7 of the Montreal Protocol and the UNFCCC (for USA) was about 836 tonnes.

26. Ms. Maranion then relayed the refrigeration, air conditioning, and heat pump (RACHP) sector update. She noted that the availability of lower GWP alternative refrigerants continues to grow for most RACHP sectors with twenty new lower-GWP refrigerant blends having received designations and classifications from ASHRAE Standard 34 and/or from ISO 817. She then noted that the domestic refrigeration industry is accelerating the conversion from HFC-134a to HC-600a and that in food retail, food service and transport refrigeration, there were <150 GWP alternative refrigerants (non-fluorinated refrigerants and HFO containing blends) commonly used in non-Article 5 parties. In both non-Article 5 and Article 5 parties, lower GWP alternative refrigerants continue to replace high-GWP R-404A and HFC-134a. She noted that the HFC/HFO blend R-452A is now used in road transport refrigeration while HFO-1234yf is used in marine container refrigeration.

27. Ms. Maranion then described new regulations in the United States and Europe, where GWP limits on small and large air-conditioning and heat pump systems are driving the growth and adoption of <700 and <150 GWP alternatives to high-GWP refrigerants. She then noted that vehicle electrification requires holistic vehicle thermal management (heating and cooling of the driver cabin along with battery cooling) and that a cooperative research program is underway, investigating lower-GWP refrigerants suitable for electric vehicles.

28. Ms. Maranion then described the RTOC lead in TEAP's response to decision XXXV/10 on energy efficiency, which requested TEAP: "… to include in its 2024 progress report updates on the information identified in paragraph 1 (a) of decision XXXIV/3, taking into account discussions at the Thirty-Fifth Meeting of the Parties to the Montreal Protocol." She then described the TEAP updates on energy efficiency while phasing down HFCs in the RACHP sectors including passive cooling, higher energy efficiency standards, and faster phase-down of climate warming refrigerants used in the cooling industry which could avert up to 60% of the predicted direct and indirect CO_2eq emissions from the cooling sector by 2050 (according to the Global Cooling Stocktake Report of 2023). She then noted that many Article 5 parties are working on approving harmonized regional Minimum Energy Performance Standards (MEPS) for air conditioners and residential refrigerators and that dumping of high-GWP and/or ODP refrigerant and low-efficiency cooling equipment is widespread, with additional evidence presented for Southeast Asia (in the report).

29. Ms. Maranion described the TEAP response to decision XXXV/11 on life-cycle refrigerant management (LRM), which requests TEAP to provide information on the "Available technologies for the leakage prevention, recovery, recycling, reclamation and destruction (RRRD) of refrigerants, and their accessibility…The obstacles and challenges associated with the effective leakage prevention and RRRD of refrigerants…The costs and climate and ozone benefits associated with the leakage prevention and RRRD of refrigerants…Policies, incentive schemes, such as producer's responsibility schemes, good practices and lessons learned related to ensuring the effective leakage prevention and RRRD of refrigerants". TEAP formed a task force to respond to the decision and presented its report to OEWG-46. The successful LRM workshop hosted by Ozone Secretariat discussed and expanded on main findings from Task Force report.

Annex II

Statement by the Chair of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol on the work of the Executive Committee, the Multilateral Fund secretariat and the Fund's implementing agencies*

Mme/Mr President, distinguished parties,

On behalf of the Executive Committee of the Multilateral Fund, I am pleased to report to the parties on the major strides made by the Executive Committee since the Thirty-Fifth Meeting of the Parties in 2023.

Since then, the Committee held two meetings, the 93rd and 94th. During these meetings, the Committee made decisions that continue to ensure the phase-out of HCFCs, the implementation of the Kigali Amendment and support all Article 5 countries in this process.

Document UNEP/OzL.Pro.36/8 provides a comprehensive description of the deliberations and significant outcomes of the Committee's work in the reporting period, the projects approved, the status of implementation of ongoing projects, as well as policy issues, business planning, financial and administrative matters.

After the agreement on the incremental costs for the refrigeration servicing sector, the Committee continued to discuss the outstanding issues related to the HFC cost guidelines. Important progress was made on the costs for the domestic refrigeration and the foam sectors as well as the operating costs for the commercial refrigeration sector. The Committee will continue discussing the cost funding guidelines at its upcoming meeting in December focusing on large enterprises in the stationary air-conditioning sector, small and medium-sized enterprises and the starting point for sustained aggregate reductions.

Parties have been discussing for years enhancing energy efficiency while phasing down HFCs. Energy efficiency is also in the agenda of this meeting. The Executive Committee has advanced its approach on energy efficiency with a breakthrough decision at the 94th meeting. The Fund has now an operational framework to enhance energy efficiency when phasing down HFCs in the manufacturing of equipment such as domestic refrigerators, commercial refrigeration systems, residential and commercial air conditioning for an initial period of three years, with an augmentable funding window of $100 million for projects developed and implemented under the framework.

The experience gained from projects reviewed and implemented will help us refine this operational framework. The Fund Secretariat was also requested, to further elaborate on the operational framework, in relation to costs for maintaining and/or enhancing energy efficiency in non-manufacturing activities, costs for maintaining and/or enhancing energy efficiency for component manufacturers and heat-pump manufacturers and a revolving fund for end-user incentive projects. These elements will be discussed in December, and we will be reported to the 37th Meeting of the Parties.

The Executive Committee has also been discussing the consumption of HFCs in the local installation and assembly subsector. The discussion will continue with an update on the matter at the 95th meeting. The Committee also encouraged bilateral and implementing agencies and Article 5 countries, when developing their KIPs to include local installation and assembly and ensure a sustained phase-down of HFCs in the applications being targeted by the projects.

The issue of accessibility and affordability of alternatives in the PU foam sector has been raised by Article 5 countries and members discussed the issue based on the information provided by the Fund Secretariat. The discussion was non-conclusive, and the Committee requested for a paper updating the information on alternative technologies in the PU foam manufacturing sector for Article 5 countries. Consideration was also given to HFCs contained in imported pre-blended polyols in the PU foam sector in stage I of KIPs and the issue will be discussed at the 95th meeting on the basis of past practice with regard to HCFCs contained in imported pre-blended polyols.

The Executive Committee also agreed the modalities for the distribution of funding tranches for KIPs, allowing Article 5 countries to submit the final funding tranche for stage I of KIPs, at the earliest, two years prior to the last year of the plan for which a consumption target has been established, on the

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understanding that the first tranche of stage I of their KIP should be at a funding level not higher than 60 per cent of the total funding for the plan.

On the issue of life-cycle refrigerant management, the Committee requested the Fund Secretariat to prepare, for the 97th meeting, a report providing an overview of the report of the Technology and Economic Assessment Panel and an overview of the status of implementation and preliminary outcomes of the projects submitted under decision 91/66 with a view to enabling the Committee to consider the establishment of a funding window in line with decision XXXV/11. The discussions that parties and other stakeholders had on the workshop ahead of the 36th Meeting of the Parties, will provide important information for the work of the MLF secretariat and the discussion that the members will have on the issue next year.

As a follow up to the recommendation by the Multilateral Organisation Performance Assessment Network, the Committee approved a results framework and scorecard with indicators to measure the effectiveness of the Fund.

I would like to refer as well to the half-day session on strategic approaches to the implementation of the Kigali Amendment that took place immediately prior to the 94th meeting last May. This session allowed members to informally discuss how they can design more strategically their KIPs and how they can pursue greater benefits beyond the minimum required for compliance. The Committee decided to continue these discussions in future meetings taking also into consideration the information provided on how HCFC phase-out and HFC phase-down activities supported by the Fund might contribute to sustainable cooling. The next half day session will take place immediately after the upcoming 95th meeting.

Recognizing the increased workload of implementing agencies, the greater technical expertise required as well as the support to the low volume consuming countries, the Committee approved an increase in the core unit funding for UNDP, UNIDO and the World Bank, as well as for the UNEP Compliance Assistance Programme for the provision of technical and policy assistance to LVC countries to support KIP implementation. Agency fees for LVC countries has also been increased.

I would like next to briefly update you on the activities and main achievements during the past year of our implementing agencies, thanks to which delivery on the ground is possible. This is the time where all parties can appreciate the hard work of UNDP, UNEP, UNIDO and the World Bank.

UNDP

UNDP provides technical support to 47 countries to meet their HCFC targets under the Montreal Protocol and provides support to 33 countries to prepare their Kigali HFC Implementation Plans (KIPs). 16 KIPs have been submitted. UNDP strives to support innovation through digital tools for reducing HFC emissions in cooling systems, as well as through new technology for low carbon data centres using immersion cooling systems. UNDP assisted twelve countries to develop strategies for sustainable cooling through National Cooling Action Plans (NCAPs) and supported joined interventions for the implementation of the Kigali Amendment and energy efficiency through collaboration with other partners, such as in the Cool-Up programme and in the AGORA project. UNDP has continued to apply the Fund's Policy on Gender Mainstreaming.

UNEP

UNEP supported 102 countries with institutional strengthening projects, helped them report timely their data, and assisted them to meet their HCFC phase-out commitments through HPMPs, Regional Networks of Ozone Officers, Information Clearinghouse products, and compliance assistance services. UNEP supported 59 countries with KIP preparation and helped their refrigeration servicing sector safely adopt low-GWP, energy efficient technologies. UNEP organized 7 Energy Efficiency Twinning Workshops that helped enhance cooperation between Ozone Officers and their energy counterparts; and continued prioritizing technical and policy assistance for low volume consuming countries to address their specific needs. With UNEP's support, 27 countries are preparing their inventories of banks of used or unwanted controlled substances and associated business models.

UNIDO

UNIDO is currently implementing HPMPs in 67 countries, KIPs in 22 countries, institutional strengthening projects in 14 countries, and projects on HFC-23 by-product emission destruction in 2 countries. Three of the five HFC investment projects are already completed, and these will provide further information on the costs for HFC phase-down. UNIDO continues to support countries on their path to complete HCFC phase-out and HFC phase-down, with ongoing preparatory activities for KIPs in 35 countries and for HPMPs in nine countries. Utilizing the new funding windows, UNIDO received approval to implement pilot projects on energy efficiency in eight countries and ODS

inventories in 21 countries. UNIDO applies a systems innovation approach in its projects and leverages multiple funding windows made available by the MLF. UNIDO stands ready to continue supporting Article 5 countries in manufacturing, servicing, and assembly sectors, as well as in emerging areas of relevance to the Montreal Protocol, such as sustainable cooling.

World Bank

The World Bank assisted countries with the submission of their KIPs and their approval in 2023. These KIPs incorporate energy efficiency and refrigerant lifecycle management aspects and are consistent with institution-wide assistance on maximizing climate co-benefits while facilitating sustainable development across key economic sectors. During the preparation of the KIPs, the Bank delivered policy assistance to the countries through tools, seminars, and technical assistance to ensure a robust quota allocation system was in place before the Kigali compliance period. The World Bank also continued working with several countries to step-up stage II HCFC phaseout efforts for sustained HCFC consumption and production reductions in accordance with respective obligations while initiating the preparation of the third and final stage of HCFC phase-out in others.

Mme/Mr President, distinguished delegates,

I would like to take this opportunity to express my sincere appreciation to the members of the Executive Committee for their support in my role as the Chair, the Fund Secretariat, and the bilateral and implementing agencies, for their continued hard work and dedication to our common goals. I would like to thank my colleague, Ms. Annie Gabriel from Australia as she was the Chair in one of the Executive Committee meetings since the last Meeting of the Parties.

I would also like to thank the parties for their strong commitment to the implementation of the Montreal Protocol and the guidance you provide to the Executive Committee.

Thank you.

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UNITED NATIONS

UNEP

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Vienna Convention for the Protection of the Ozone Layer

Montreal Protocol on Substances that Deplete the Ozone Layer

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Thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer
Bangkok, 28 October–1 November 2024

Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer
Bangkok, 28 October–1 November 2024

Decisions adopted by the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer at its thirteenth meeting and by the Thirty-Sixth Meeting of the Parties to the Montreal on Substances that Deplete the Ozone Layer

I. Vienna Convention decisions

Decision XIII/1: Recommendations of the Ozone Research Managers of the Parties to the Vienna Convention at their twelfth meeting

Recalling that, pursuant to the objectives defined in decision I/6 of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer, the Ozone Research Managers of the Parties to the Vienna Convention review ongoing national and international research and monitoring programmes to ensure proper coordination of those programmes and identify gaps that need to be addressed,

Recalling Article 3 of the Vienna Convention, which provides that the parties undertake to promote or establish, as appropriate, joint or complementary programmes for systematic observation of the state of the ozone layer and other relevant parameters, as elaborated in annex I to the Convention, which includes substances controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer,

Taking note with appreciation of the contributions of the Ozone Research Managers to the work under decision XXXV/14 of the Thirty-Fifth Meeting of the Parties to the Montreal Protocol, on enhancing the global and regional atmospheric monitoring of substances controlled by the Montreal Protocol,

Welcoming decision XXXVI/1 of the Thirty-Sixth Meeting of the Parties to the Montreal Protocol, on enhancing regional monitoring of substances controlled by the Montreal Protocol,

Recognizing the need to improve the understanding and accuracy of future projections concerning global ozone amounts, including ozone layer recovery, and the importance of maintaining and enhancing existing capabilities for observing ozone layer and climate variables, owing to the changing atmospheric composition and the strong coupling between the behaviour of the ozone layer and changes in climate, as well as the importance of related capacity-building activities in developing countries and countries with economies in transition,

The Conference of the Parties decides:

1. To take note with appreciation of the report of the twelfth meeting of the Ozone Research Managers of the Parties to the Vienna Convention;[1]

2. To encourage parties to adopt and implement, as appropriate, the recommendations of the Ozone Research Managers on the topics of research needs, systematic observations, gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring, data archiving and stewardship, and capacity-building;

3. To also encourage parties to accord priority in particular to:

(a) Research and systematic observation activities, including monitoring of the ozone layer using ground, satellite, aircraft and balloon profiles and monitoring of substances controlled under the Montreal Protocol and related substances, to analyse processes influencing the evolution of the ozone layer and its links to climate change;

(b) Maintaining, augmenting, restoring and, where feasible, establishing new long-term capacity and infrastructure for the atmospheric monitoring and observation of substances controlled under the Montreal Protocol and related substances in order to enhance estimates of regional emissions, including in currently unmonitored and undermonitored regions;

(c) Improved management and analysis of observation data, including for international open-access and collaborative research activities, long-term curation and storage, standardization and intercomparability, to support modelling and near real-time assessments;

(d) Support for capacity-building activities in developing countries and countries with economies in transition, including through the continuation and expansion of regular calibration and intercomparison campaigns and the establishment of stations for monitoring of substances controlled under the Montreal Protocol and related substances and through the provision of training and assistance to enable those parties to expand their scientific capacity and participate in ozone research activities, including assessment activities under the Montreal Protocol;

4. To encourage the national ozone focal points to improve communication with the Ozone Research Managers to enhance cooperation among the relevant national institutions, such as ministries, space agencies, departments and academia, to ensure proper coordination in the fields of monitoring, research and scientific activities;

5. To request the Ozone Research Managers, at their thirteenth meeting, to continue to review the situation regarding atmospheric measurements and monitoring of substances controlled by the Montreal Protocol, and to make specific recommendations for further strengthening such atmospheric monitoring.

Decision XIII/2: General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention

Recalling decision VI/2, by which the Conference of the Parties to the Vienna Convention established the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention,

Welcoming decision 6/6 adopted by the United Nations Environment Assembly, which extended the General Trust Fund to 31 December 2030 unless otherwise requested by the appropriate authorities, and noting that the extension of trust funds is an administrative matter that falls under the delegation of the Executive Director of the United Nations Environment Programme and hence will, as of the seventh session of the Environment Assembly, no longer require a decision by Member States,

Noting with appreciation the contributions to the Trust Fund by several parties and the joint efforts of the World Meteorological Organization and the Ozone Secretariat in the implementation of the activities funded from the Trust Fund since it became operational in 2003, which enabled important activities, including calibrations, intercomparisons and relevant training, to be implemented,

Noting with great concern, however, that the resources available in the Trust Fund are not sufficient to enable substantial and sustainable improvements to be made to the global ozone observation system,

[1] Available at https://ozone.unep.org/system/files/documents/ORM12_Report-part1.pdf and https://ozone.unep.org/system/files/documents/ORM12_Report-PartII.pdf.

Aware that improvements in ozone observations should take into account the existing strong and intricate linkages between ozone and climate, and aware of the need to carry out observations and analyses relevant for both ozone and climate wherever possible,

Noting with appreciation the work of the Advisory Committee of the Trust Fund and its report to the thirteenth meeting of the Conference of the Parties to the Vienna Convention, including on the long-term strategy and short-term plan of action for the Trust Fund prepared for consideration by the Conference of the Parties pursuant to decision X/3,

Taking note of the recommendations of the twelfth meeting of the Ozone Research Managers related to gaps in the global coverage of atmospheric monitoring of controlled substances and options for enhancing such monitoring, which recognized that the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention could be a viable mechanism for funding such measurement activities for the improvement of observational network and relevant research, if additional funds were available for such purposes,

Welcoming decision XXXVI/1 of the Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, on enhancing regional monitoring of substances controlled by the Montreal Protocol,

The Conference of the Parties decides:

1. To recognize that the purpose of the General Trust Fund includes supporting activities related to the atmospheric monitoring of substances controlled under the Montreal Protocol, a point also emphasized in the recommendations[2] made by the Ozone Research Managers at their twelfth meeting;

2. To encourage parties to make contributions to the General Trust Fund for the purpose of improving the global ozone observing system and for enhancing the global and regional monitoring of substances controlled by the Montreal Protocol, taking into consideration the report of the Advisory Committee of the Trust Fund to the thirteenth meeting of the Conference of the Parties;

3. To request the Ozone Secretariat:

(a) To organize the work of the Advisory Committee in line with Montreal Protocol decision XXXVI/1 and to allow it to invite additional experts in the monitoring of Montreal Protocol controlled substances;

(b) To continue to invite parties and relevant international organizations, including space agencies, scientific and research institutions, United Nations entities, international financial institutions and the private sector, as appropriate, to make financial and/or in-kind contributions towards well-defined and well-budgeted project proposals developed under the Trust Fund;

(c) To facilitate the receipt of additional funds for the monitoring of controlled substances;

(d) To ensure that the management of the additional funds referred to in paragraph 3 (c) above adheres to relevant established financial procedures and reporting requirements, noting the need for separate accounting and reporting for resources for the monitoring of controlled substances;

(e) To report to the Conference of the Parties at its fourteenth meeting on the operation of, contributions to and expenditures on the activities funded from the Trust Fund since its inception, as well as on the activities of the Advisory Committee;

4. To request the Advisory Committee, with the assistance of the World Meteorological Organization and the Ozone Secretariat, to:

(a) Continue to implement its long-term strategy and short-term plan of action, ensuring that activities relevant to enhancing monitoring of substances controlled under the Montreal Protocol are taken into account;

(b) Support the work of the Ozone Secretariat to organize activities for the specific purpose of evaluating the suitability of potential sites for monitoring regional emissions of controlled substances, taking into consideration:

(i) The suitability of potential sites in consultation with the party concerned for providing regionally representative data covering areas in which controlled substances are produced, used or emitted in substantial volumes at measurable

[2] UNEP/OzL.Conv.13/6.

concentration levels, while addressing existing gaps in atmospheric monitoring and avoiding duplication with the coverage of existing and planned monitoring sites;

(ii) The potential for partnering with scientific institutions that can provide personnel or technical expertise for data collection, data management and data analysis or other in-kind contributions;

(iii) Potential cost savings and other benefits from relying on existing infrastructure and/or monitoring networks;

(iv) The capacity to coordinate the calibration of equipment and validation of data with other controlled substance monitoring stations and networks;

(v) The sharing of data between monitoring stations and the potential to integrate new monitoring capability and newly obtained data into existing monitoring and data networks;

(vi) The importance of consulting with the relevant party prior to undertaking exploratory measurements at potential monitoring locations;

(c) Identify gaps and needs in research and monitoring of ozone, substances controlled under the Montreal Protocol, and related climate variables and parameters, complementing the ongoing efforts of the Ozone Research Managers and other relevant programmes such as the World Meteorological Organization Global Atmosphere Watch and Global Greenhouse Gas Watch programmes;

(d) Facilitate the relocation of unused Dobson and Brewer instruments and the use of ozonesondes to new observation programmes when such relocation is requested and in line with global and regional observation priorities, while exploring possibilities for transitioning to newer instruments;

(e) Foster stronger relationships with scientific institutions and related global networks to build capacity and increase the infusion of knowledge for the activities under its consideration;

(f) Continue to explore opportunities for leveraging and catalysing its resources to safeguard necessary research and observation activities in line with its strategic plan.

Decision XIII/3: Financial reports and budgets for the Vienna Convention for the Protection of the Ozone Layer

Recalling decision XII(II)/4 on financial reports and budgets for the Vienna Convention for the Protection of the Ozone Layer,

Taking note of the financial reports for the Trust Fund for the Vienna Convention for the Protection of the Ozone Layer for the fiscal years 2021, 2022 and 2023,[3]

Recognizing the voluntary contributions of parties as an essential complement for the effective implementation of the Vienna Convention,

Welcoming decision 6/6 adopted by the United Nations Environment Assembly at its sixth session, which extended the Trust Fund for the Vienna Convention to 31 December 2030 unless otherwise requested by the appropriate authorities, and noting that the extension of trust funds is an administrative matter that falls under the delegation of the Executive Director and hence will, as of the seventh session of the Environment Assembly, no longer require a decision by Member States,

Welcoming also the continued efficient management by the Secretariat of the finances of the Trust Fund for the Vienna Convention,

The Conference of the Parties decides:

1. To approve the budget for 2025 in the amount of 911,910 United States dollars, the budget for 2026 in the amount of 927,730 United States dollars and the budget for 2027 in the amount of 1,504,030 United States dollars, as set out in table A of annex I to the addendum to the report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer;

[3] UNEP/OzL.Pro.34/5, UNEP/OzL.Pro.35/5 and UNEP/OzL.Conv.13/5–UNEP/OzL.Pro.36/5.

2. To reaffirm a working capital reserve equivalent to 15 per cent of the annual operational budgets for the triennium 2025–2027, to be used to meet the final expenditures under the Trust Fund;

3. To approve the contributions to be paid by the parties, of 782,000 United States dollars in 2025, 782,000 United States dollars in 2026 and 782,000 United States dollars in 2027, as set out in table B of annex I the addendum to the report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer;

4. To authorize the Executive Secretary to draw down from the cash balance the funds required to cover the shortfall between the level of contributions agreed upon in paragraph 3 of the present decision and the approved budgets for the triennium 2025–2027, as set out in paragraph 1 of the present decision;

5. To note with concern that some parties have not paid their contributions for 2024 and prior years, and to urge all parties to pay their outstanding contributions as well as their future contributions promptly and in full;

6. To request the Executive Secretary, and to invite the President of the Bureau of the Conference of the Parties, to enter into discussions with any party whose contributions have been outstanding for two or more years with a view to finding a way forward, and to request the Executive Secretary to report on the outcome of those discussions to the Conference of the Parties at its fourteenth meeting, to be held in 2027;

7. To consider further, at its fourteenth meeting, how to address outstanding contributions to the Trust Fund, and to request the Executive Secretary to continue to publish and regularly update information on the status of contributions to the Trust Fund;

8. To request the Executive Secretary:

(a) To ensure the full utilization of the programme support resources available to the Ozone Secretariat in the triennium 2025–2027 and in later years and, where possible, to offset programme support resources against the administrative components of the approved budget;

(b) To indicate in future financial reports of the Trust Fund the amounts of cash on hand, in addition to contributions that have not yet been received;

9. To further request the Executive Secretary to prepare budgets and work programmes for the triennium 2028–2030, based on the projected needs for the triennium, for two budget scenarios:

(a) A zero-nominal-growth scenario;

(b) A scenario based on recommended adjustments to the zero-nominal-growth scenario, indicating the added costs or savings related thereto;

10. To take note with appreciation of the extension of the Trust Fund for the Vienna Convention until 31 December 2030 granted by the United Nations Environment Assembly at its sixth session.

Decision XIII/4: Fourteenth meeting of the Conference of the Parties to the Vienna Convention

The Conference of the Parties decides:

To convene the fourteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer back to back with the Thirty-Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer.

II. Montreal Protocol decisions

Decision XXXVI/1: Enhancing regional atmospheric monitoring of substances controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer

Recalling decision XXXV/14 and taking note with appreciation of the information reported by the Secretariat at the forty-sixth meeting of the Open-ended Working Group of the Parties to the

Montreal Protocol on Substances that Deplete the Ozone Layer and the recommendations[4] arising from the twelfth meeting of the Ozone Research Managers, in particular recommendation 2.2 – to enhance monitoring of ongoing emissions at the global and regional scales, especially in under-sampled regions – and the recommendations on gaps in the global coverage of atmospheric monitoring of controlled substances and options to enhance such monitoring,

Noting that the selection of suitable locations for the establishment of monitoring of emissions of controlled substances on a regional basis is the first stage in developing a more comprehensive approach to understanding the sources of emissions,

Recalling decision VI/2 of the Conference of the Parties to the Vienna Convention,

The Thirty-Sixth Meeting of the Parties decides:

1. To request the Ozone Secretariat, in consultation with the Advisory Committee of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, to organize activities for the specific purpose of evaluating the suitability of potential sites for monitoring regional emissions of controlled substances with a 2025 budget line item of 400,000 United States dollars from the cash balance of the Montreal Protocol Trust Fund, on an exceptional basis, and to request the Secretariat to report to the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-seventh meeting and the Thirty-Seventh Meeting of the Parties to the Montreal Protocol on progress and any outcomes of these activities for review by the parties;

2. To request the Ozone Secretariat to support the work of the Advisory Committee of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention in mapping possible locations for monitoring controlled substances using existing facilities currently being used to monitor other substances and reaching out to other organizations to determine possible interest in coordinating monitoring or sharing monitoring facilities;

3. To invite parties to the Vienna Convention to:

(a) Request the Secretariat, in consultation with the Advisory Committee of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention, to undertake projects to evaluate the suitability of potential sites for monitoring regional emissions of controlled substances, taking into consideration:

(i) The suitability of potential sites in consultation with the party concerned for providing regionally representative data covering areas in which controlled substances are produced, used or emitted in substantial volumes at measurable concentration levels, while addressing existing gaps in atmospheric monitoring and avoiding duplication with the coverage of existing and planned monitoring sites;

(ii) The potential for partnering with scientific institutions that can provide personnel or technical expertise for data collection, data management and data analysis or other in-kind contributions;

(iii) Potential cost savings and other benefits from relying on existing infrastructure and/or monitoring networks;

(iv) The capacity to coordinate the calibration of equipment and validation of data with other controlled substance monitoring stations and networks;

(v) The sharing of data between monitoring stations and the potential to integrate new monitoring capability and newly obtained data into existing monitoring and data networks;

(vi) The importance of consulting with the relevant party prior to undertaking exploratory measurements at potential monitoring locations;

(b) Add the atmospheric monitoring of controlled substances as a purpose of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention;

(c) Confirm that the Advisory Committee of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention can include additional experts on the monitoring of controlled substances;

[4] UNEP/OzL.Conv.13/6.

(d) Entrust the Secretariat to modify the terms of reference for the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention and for its Advisory Committee, in accordance with this decision;

(e) Request the Advisory Committee to accept guidance and to report on progress to the Thirty-Seventh Meeting of the Parties to the Montreal Protocol and subsequent Meetings of the Parties;

4. To request the Executive Committee of the Multilateral Fund to consider a funding modality to support a limited number of pilot projects to enhance regional atmospheric monitoring of substances controlled by the Montreal Protocol, guided by the scientific advice of the Advisory Committee of the General Trust Fund for Financing Activities on Research and Systematic Observations Relevant to the Vienna Convention in relation to the location and establishment of new monitoring facilities, and to report to the Thirty-Seventh Meeting of the Parties on work undertaken to develop such a funding modality for further consideration;

5. To request the Ozone Secretariat to provide any updates to its cost estimates and options for long-term financing associated with enhancing atmospheric monitoring provided under decision XXXV/14 for consideration by the Thirty-Seventh Meeting of the Parties.

Decision XXXVI/2: Life-cycle refrigerant management

Taking note with great appreciation of the recent report of the Technology and Economic Assessment Panel prepared in response to decision XXXV/11,

Taking into consideration the discussions and presentations at the workshop on life-cycle refrigerant management held on 27 October 2024,

Cognizant of the ongoing work by parties following decision 91/66 of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol establishing a funding window to support the preparation of national inventories of banks of used or unwanted controlled substances and a plan for the collection, transport and disposal of such substances, including consideration of recycling, reclamation and cost-effective destruction,

The Thirty-Sixth Meeting of the Parties decides:

1. To request the Technology and Economic Assessment Panel to include updated relevant information on life-cycle refrigerant management in its 2025 and subsequent progress reports, including the 2026 quadrennial assessment report, taking into account discussions at the Thirty-Sixth Meeting of the Parties to the Montreal Protocol;

2. To invite the Executive Committee and the secretariat of the Multilateral Fund to continue to consider ways to enhance life-cycle refrigerant management in their work;

3. To encourage parties to submit information, where available, to the Ozone Secretariat related to life-cycle refrigerant management activities, for instance, on financial and technological resources, capacity-building resources, costs related to life-cycle refrigerant management activities, initiatives taken, relevant regulations, if any, and challenges encountered by parties operating under paragraph 1 of Article 5 of the Montreal Protocol and parties not so operating, by 31 May 2025;

4. To request the Ozone Secretariat to compile information on life-cycle refrigerant management, including information on existing programmes that support life-cycle refrigerant management efforts and any information submitted pursuant to paragraph 3 above, and post it on its website;

5. To encourage parties to consider incorporating life-cycle refrigerant management in their national policies and planning relating to implementation of the Montreal Protocol;

6. To encourage parties operating under paragraph 1 of Article 5 to:

(a) Take into account the lessons learned regarding life-cycle refrigerant management from the 2024 report of the Technology and Economic Assessment Panel and the life-cycle refrigerant management workshop organized by the Ozone Secretariat on 27 October 2024 when preparing and implementing their Kigali implementation plans and, if applicable, preparing their national inventories and plans pursuant to decision 91/66 of the Executive Committee of the Multilateral Fund;

(b) Use their regional networks of national ozone officers to further build capacity, share knowledge and other resources, and advance cooperative approaches to enhancing life-cycle refrigerant management.

Decision XXXVI/3: Emissions of HFC-23

Noting with appreciation the updated information on HFC-23 emissions submitted by the Technology and Economic Assessment Panel and the Scientific Assessment Panel to the Thirty-Sixth Meeting of the Parties in response to decision XXXV/7,

Noting with concern that measured atmospheric abundances of HFC-23 continue to be substantially higher than the amounts expected on the basis of reporting by parties as set out in the response of the Scientific Assessment Panel to decision XXXV/7,

Recalling the obligations under Article 2J of the Montreal Protocol to ensure that HFC-23 emissions from relevant production facilities are destroyed to the extent practicable using technologies approved by the parties,

The Thirty-Sixth Meeting of the Parties decides:

1. To invite relevant parties to undertake, as appropriate, and to encourage scientific institutes to undertake or cooperate with other institutions in undertaking atmospheric monitoring of HFC-23 and research on sources of HFC-23 emissions and to share the results with the scientific community;

2. To encourage parties to study the potential reasons for differences between reported emissions and emission estimates derived from atmospheric monitoring, and to submit relevant information to the Ozone Secretariat when available and as appropriate;

3. To invite parties that have HCFC-22 production facilities to submit to the Ozone Secretariat by 31 March 2025, on a voluntary basis, their current methodologies for estimating and reporting of HFC-23 emissions from HCFC-22 production;

4. To invite parties that have adopted best practice technologies to reduce HFC-23 emissions to provide such information to the Ozone Secretariat by 31 March 2025, on a voluntary basis;

5. To request the Scientific Assessment Panel and the Technology and Economic Assessment Panel to update decision XXXV/7 reports on HFC-23 to reflect any additional or new information that becomes available, and to submit their reports on the matter to the Thirty-Seventh Meeting of the Parties;

6. To request the Technology and Economic Assessment Panel to provide information on and a comparison of best practices and guidelines relating to measuring, estimating, reporting and verifying HFC-23 by-product emissions and their destruction.

. Decision XXXVI/4: Additional information on very short-lived substances

Taking note with appreciation of the information on very short-lived substances in the 2022 quadrennial assessment report of the Scientific Assessment Panel, the 2022 assessment report of the Medical and Chemical Technical Options Committee of the Technology and Economic Assessment Panel, and the 2024 progress report of the Technology and Economic Assessment Panel,

Noting that the 2022 quadrennial assessment report of the Scientific Assessment Panel indicates that chlorine emissions from very short-lived substances not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer, in particular from dichloromethane, continue to increase,

Noting that any party that has information on alternatives to very short-lived substances and best practices for avoiding such emissions can provide such information to the Technology and Economic Assessment Panel,

The Thirty-Sixth Meeting of the Parties decides:

1. To request the Technology and Economic Assessment Panel and the Scientific Assessment Panel to include the following information, as it pertains to their respective mandates, in their 2026 assessment reports, for consideration by the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-ninth meeting;

(a) Updated information on dichloromethane, trichloromethane, dichloroethane, trichloroethylene and perchloroethylene, including their emissive solvent and feedstock uses and growth trends for the past five years, their ozone-depleting potential, and their impact on the stratospheric ozone layer in quantifiable terms;

(b) Any available relevant information on other anthropogenic very short-lived substances not mentioned in chapter 5.2 of the 2024 progress report of the Technology and Economic Assessment Panel, along with the methodology used, growth trends for the past five years, their ozone-depleting potential, and their impact on the stratospheric ozone layer in quantifiable terms;

(c) Additional information on alternatives to the very short-lived substances, including of solvents with a low boiling point, referred to in subparagraphs (a) and (b) above in the emissive applications where they are currently used, including information on availability and accessibility; technical feasibility; performance, including the yield of the end product; economic viability; safety and sustainability; and penetration in parties operating under paragraph 1 of Article 5 of the Montreal Protocol, with a focus on very short-lived substances with significant emissive uses;

(d) A table providing the following information, to the extent possible, for each very short-lived substance identified in subparagraphs (a) and (b) above: estimated annual production and consumption; estimated annual emissions; the range of ozone-depleting potential estimated or evaluated by the Scientific Assessment Panel; the contribution by the substance to the total chlorine input to the stratosphere; and its impact on the stratospheric ozone layer in quantifiable terms;

2. To invite parties that have national measures concerning use and/or emissions of very short-lived substances to provide the Ozone Secretariat with information on those measures, on a voluntary basis, by 31 March 2025;

3. To request the Ozone Secretariat to provide a compendium of national measures based on the information provided in accordance with paragraph 2 above.

Decision XXXVI/5: Feedstock uses of controlled substances

Recalling paragraph 5 of Article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, which excludes the calculated level of controlled substances produced that are entirely used as feedstock in the manufacture of other chemicals from the definition of "production" of controlled substances,

Recalling also decision IV/12, in which parties were urged to take steps to minimize emissions of such substances,

Noting that the 2022 assessment reports of the Technology and Economic Assessment Panel and the Scientific Assessment Panel and the 2023 and 2024 progress reports of the Technology and Economic Assessment Panel highlight significant increases in the production of controlled substances used as feedstock,

Taking note with appreciation of information provided by the Technology and Economic Assessment Panel, in its 2024 progress report, on best practices and technologies for reducing emissions of controlled substances produced and used for feedstock, in response to decisions XXXV/8 and XXXV/9,

The Thirty-Sixth Meeting of the Parties decides:

1. To request relevant parties, in accordance with decision IV/12, to continue taking steps to minimize emissions of controlled substances during their production, transportation, distribution, storage, handling, repackaging and use as feedstock, including such steps as avoidance of the creation of such emissions and reduction of emissions using practicable control technologies or process changes, containment or destruction;

2. To encourage parties to promote the use of practices and technologies, including those identified by the Technology and Economic Assessment Panel in its 2024 progress report and taking into account national circumstances, to reduce emissions of controlled substances during their production, transportation, distribution, storage, handling, repackaging and use as feedstock in the manufacture of other chemicals;

3. To encourage parties that have practices and technologies such as those mentioned in paragraph 2 above to provide information about those practices and technologies to the Ozone Secretariat in order to assist parties in promoting the application of such practices and technologies;

4. To invite parties with production and/or use of controlled substances for feedstock to provide to the Ozone Secretariat, on a voluntary basis, by 1 May 2025, information on their established national procedures and frameworks for management of such production and use, including any controls on resulting emissions;

5. To request the Ozone Secretariat to collate and summarize the information provided pursuant to paragraphs 3 and 4 above for consideration by the Open-ended Working Group of the Parties to the Montreal Protocol at its forty-seventh meeting.

Decision XXXVI/6: Developments regarding metered-dose inhalers with low-global-warming-potential propellants

Noting with appreciation the work done by the Technology and Economic Assessment Panel and its Medical and Chemical Technical Options Committee, as reflected in the 2022 quadrennial report of the Panel and the 2023 progress report of the Medical and Chemical Technical Options Committee, in relation to metered-dose inhalers,

Noting the range of issues and potential challenges identified by the Medical and Chemical Technical Options Committee that could emerge in the transition away from high-global-warming-potential propellants currently used in pressurized metered-dose inhalers,

Recalling that the Kigali Amendment to the Montreal Protocol is not prescriptive about the uses of hydrofluorocarbons that parties should phase down first,

Recognizing that access to metered-dose inhalers represents a public health concern and should be preserved from critical shortages and abrupt price increases,

The Thirty-Sixth Meeting of the Parties decides:

1. To encourage parties to promote coordination between national environmental and health authorities in raising awareness regarding metered-dose inhaler propellants with low global warming potential and the availability of other alternatives, including their impact on climate and the environment, recognizing the need to ensure patient access to critical health remedies;

2. To invite parties that produce metered-dose inhalers to submit to the Ozone Secretariat, preferably by June 2025 or when it becomes available, on a voluntary basis, any relevant information on progress in the development of metered-dose inhaler products using lower-global-warming-potential propellants and on the availability of other alternatives, as well as on the implementation of lessons learned during previous metered-dose inhaler propellant transitions;

3. To request the Technology and Economic Assessment Panel to continue to provide updated information, in its annual progress report, on low-global-warming-potential metered-dose inhaler propellants, and to complement its 2026 quadrennial assessment report with timely information including on their availability, technical feasibility, economic viability, safety and market penetration in parties operating under paragraph 1 of Article 5 of the Montreal Protocol and those not so doing;

4. To encourage Parties to revisit the issue no later than 2027 in the light of updated information provided in the 2026 quadrennial assessment report of the Technology and Economic Assessment Panel.

Decision XXXVI/7: Measures to support the sustainable management of recovered, recycled or reclaimed halons

Recognizing that the global production and consumption of newly manufactured halons for controlled uses were eliminated in 2009, but that since 1994 some remaining uses have relied on stocks of recovered, recycled or reclaimed halons for fire safety, and that they will continue to do so for the foreseeable future,

Recalling that the import, export and use of recovered, recycled or reclaimed halons are not controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer,

Recalling paragraph 2 of decision XXIX/8, in which parties were invited, on a voluntary basis, to reassess any national import and export restrictions other than licensing requirements with a view to facilitating the import and export of recovered, recycled or reclaimed halons and the management of stocks of such halons, with the aim of enabling all parties to meet remaining needs in accordance with national regulations even as they make the transition to alternatives to halons,

Noting with concern information provided by the Technology and Economic Assessment Panel suggesting that there could be a lack of available supply of recovered, recycled or reclaimed halons for remaining fire safety uses within the next decade, and that the destruction of halons has the potential to significantly reduce the available supply of recovered, recycled or reclaimed halons, thereby resulting in earlier run-out dates,

Noting that the Fire Suppression Technical Options Committee of the Technology and Economic Assessment Panel indicated in the 2024 progress report of the Panel that parties might wish to consider providing information on emissions from production and feedstock uses of halon 1301 to the Ozone Secretariat,

Noting also that the limited development of and transition to alternatives to halons in some applications has the potential to prolong the global reliance on recovered, recycled or reclaimed halons for remaining uses and even result in some sectors that have transitioned away from the use of halons reverting to their use,

Taking note of the information presented in the May 2024 progress report of the Technology and Economic Assessment Panel and the 2022 assessment report of the Fire Suppression Technical Options Committee, which were provided to the parties before the forty-sixth meeting of the Open-ended Working Group of the Parties to the Montreal Protocol,

The Thirty-Sixth Meeting of the Parties decides:

1. To urge parties to refrain from any destruction of recovered or recycled halons that can be reclaimed for reuse, and to ensure that sufficient stocks of recovered, recycled or reclaimed halons remain available for anticipated future needs, and invites parties to encourage relevant stakeholders to take the actions listed above;

2. To encourage parties and their stakeholders to ensure that, during maintenance and servicing of equipment, or before dismantling and disposal of equipment, halons are recovered for recycling and reclamation, with the objective of ensuring that sufficient stocks of recovered, recycled or reclaimed halons remain available for anticipated future needs;

3. To encourage parties that restrict the import and export of recovered halons beyond Montreal Protocol requirements to reconsider, as a matter of urgency, the restrictions so as to facilitate the transboundary movement and reuse of the recovered halons to the extent possible, taking into account the requirements of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, where applicable;

4. To encourage parties, as a matter of urgency, to raise awareness of the importance of sustainable management of halons and avoid the use of halons where other alternatives are available, and to inform their users of halons, including in the aviation sector and the military, of the need to prepare for the risk of reduced availability of halons in the future;

5. To request the Ozone Secretariat to continue to liaise with relevant international bodies, including the Secretariat of the Basel Convention, about the importance of sustainable management of halons and related elements of the present decision and to report on the matter to the parties as needed.

Decision XXXVI/8: Critical-use exemptions for methyl bromide for 2025

Noting with appreciation the work of the Technology and Economic Assessment Panel and its Methyl Bromide Technical Options Committee and the August 2024 report of the Panel,[5]

Acknowledging that the Technology and Economic Assessment Panel, and specifically its Methyl Bromide Technical Options Committee, produces reports that are science-based, independent and robust, and that all parties should strive to respect the results of that work,

Recognizing the significant reductions in critical-use nominations for methyl bromide by many parties,

Recalling paragraph 10 of decision XVII/9 on critical-use exemptions for methyl bromide,

Recalling that parties nominating critical-use exemptions are requested to report data on stocks of methyl bromide using the accounting framework agreed on by the Sixteenth Meeting of the Parties to the Montreal Protocol,

Recognizing that parties operating under critical-use exemptions should, in licensing, permitting or authorizing the production and consumption of methyl bromide for critical uses, take into account the extent to which methyl bromide is available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide,

[5] Report of the Technology and Economic Assessment Panel, Aug. 2024, vol. 4: Evaluation of 2024 critical-use nominations for methyl bromide and related issues – Final report.

Recalling decision Ex.I/4 on conditions for granting and reporting critical-use exemptions for methyl bromide, by which parties with critical-use exemptions were requested to submit annual accounting frameworks and national management strategies,

Recalling also decision IX/6, by which parties to the Montreal Protocol decided that the production and consumption of methyl bromide for critical uses was to be permitted only if methyl bromide was not available in sufficient quantity and quality from existing stocks of banked or recycled methyl bromide,

Recalling further decision XVI/4 on the review of the working procedures and terms of reference of the Methyl Bromide Technical Options Committee related to the evaluation of nominations for critical uses of methyl bromide, as set out in annex I to the report of the Sixteenth Meeting of the Parties,

Noting that the Technology and Economic Assessment Panel has identified successful chemical and non-chemical alternatives to methyl bromide and that the use of such alternatives in combination provides excellent results,

Noting also that the Government of Canada takes into account, to the extent feasible, available stocks of methyl bromide in licensing, permitting or authorizing the production and consumption of methyl bromide for critical uses and has fully committed itself to not submitting a nomination for 2026,

Recognizing that some parties have recently stopped requesting critical-use exemptions and that the efforts to develop alternatives and substitutes by parties that continue to apply for exemptions are designed to achieve the same outcome,

The Thirty-Sixth Meeting of the Parties decides:

1. To permit Canada, for the agreed critical-use category for 2025 specified in table A of the annex to the present decision, and subject to the conditions specified 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 2025 specified in table B of the annex to the present decision, which are necessary to satisfy the identified critical use;

2. That Canada shall endeavour to license, permit, authorize or allocate quantities of methyl bromide for the critical use specified in table A of the annex to the present decision;

3. That Canada shall renew its commitment to ensuring that the criteria in paragraph 1 of decision IX/6, and in particular the criterion laid down in paragraph 1 (b) (ii) of that decision, are applied in licensing, permitting or authorizing critical uses of methyl bromide;

4. To request Canada to report on the implementation of the present decision to the Secretariat by 1 February for the years to which the decision applies.

Annex to decision XXXVI/8

Table A
Agreed critical-use categories for 2025

Party	*Category*	*Amount[a] (metric tons)*
Canada	Strawberry runners	2.85

[a] Minus available stocks.

Table B
Permitted levels of production and consumption for 2025

Party	*Amount[a] (metric tons)*
Canada	2.85

[a] Minus available stocks.

Decision XXXVI/9: Further strengthening Montreal Protocol institutions: next steps

Recalling decisions XIV/7, XXXI/3, XXXIV/8 and XXXV/12,

Taking note with appreciation of the summary[6] of the workshop on strengthening the effective implementation and enforcement of the Montreal Protocol held in Bangkok on 2 July 2023, in response to decision XXXIV/8,

Recalling the discussions at the forty-fifth meeting of the Open-ended Working Group on the outcomes of the workshop,[7]

Taking note of the information on possible ways of dealing with illegal production of and illegal trade in controlled substances under the Montreal Protocol, identifying potential gaps in the non-compliance procedure, challenges, tools, ideas and suggestions for improvement, provided by the Secretariat to the Thirty-Fourth Meeting of the Parties,[8]

The Thirty-Sixth Meeting of the Parties decides:

1. To request the Ozone Secretariat to update its response to decision XXXIV/8, paragraph 4 (b), on identifying common features of licensing systems; to prepare a compilation of such features, including examples of licensing systems as implemented under various circumstances; and to make this information available to the parties for consideration at the forty-seventh meeting of the Open-ended Working Group;

2. To invite parties that have not done so to provide to the Secretariat information on their licensing systems;

3. To request the Secretariat to provide, before the forty-seventh meeting of the Open-ended Working Group, a compilation of the information provided by the parties pursuant to decision XXXV/12, paragraph 1, synthesizing best practices for preventing illegal trade in controlled substances, for consideration by the Thirty-Seventh Meeting of the Parties;

4. To request the Secretariat to convene a one-day informal meeting of parties prior to and back to back with the Thirty-Seventh Meeting of the Parties in order to reflect, on the basis of existing documents, on facilitating the implementation of the Montreal Protocol;

5. To invite parties to provide to the Secretariat information on how they address the disposition of detained substances;

6. To request the Secretariat to prepare, for consideration by the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol at its seventy-fourth meeting, an analysis of systemic issues in relation to compliance based on cases considered by the Committee over the past 10 years, without including information identifying specific cases, and reflecting on information provided to the Implementation Committee at its sixty-third meeting for consideration at the informal meeting referred to in paragraph 4 above.

Decision XXXVI/10: Update to the report of the Technology and Economic Assessment Panel prepared pursuant to decision XXVIII/2, paragraph 5

Recalling paragraph 5 of decision XXVIII/2 relating to the amendment phasing down hydrofluorocarbons,

Taking note with appreciation of the 2024 progress report of the Technology and Economic Assessment Panel containing a technical review of alternatives to hydrofluorocarbons,

Noting that there could be considerable demand for refrigeration and air conditioning equipment in several Article 5, group 2 parties,

The Thirty-Sixth Meeting of the Parties decides:

To request the Technology and Economic Assessment Panel to provide in its 2026 quadrennial assessment report an update by sector and subsector on low- and lower-global-warming-potential

[6] UNEP/OzL.Pro.WG.1/45/6.

[7] UNEP/OzL.Pro.WG.1/45/8, paras. 165–175.

[8] UNEP/OzL.Pro.34/8.

alternatives to hydrofluorocarbons for use in Article 5, group 2 parties to prepare for the hydrofluorocarbon freeze, including the following:

(a) Challenges and barriers in terms of availability, accessibility and adoption;

(b) Standards for alternative refrigerants and for equipment, taking into consideration the capacity of equipment in different countries;

(c) Market structure, including supply chain issues;

(d) Options for addressing the challenges and barriers to the adoption of alternatives identified in subparagraph (a) above;

(e) Information on the cost of adoption of alternatives, in the context of the information provided under subparagraphs (a) to (d) above.

Decision XXXVI/11: Avoiding imports of energy inefficient products and equipment containing- or relying on controlled substances

Noting with appreciation the significant role of decision XXVII/8 in establishing a list of parties that do not permit the importation of products and equipment containing or relying on hydrochlorofluorocarbons and do not want to receive such products or equipment,

Considering that parties, in implementing their Kigali implementation plans, may benefit from the positive experience of parties in implementing the provisions of decision XXVII/8,

The Thirty-Sixth Meeting of the Parties decides:

1. To invite parties that have restricted the import of products and equipment containing or relying on controlled substances, including with respect to energy efficiency, to provide this information, on a voluntary basis, to the Ozone Secretariat;

2. To invite parties that have national policies, standards, including minimum energy performance standards, or legislation for products and equipment containing or relying on controlled substances that do not lead to import prohibitions to inform the Secretariat, on a voluntary basis, of such national policies, standards, including minimum energy performance standards, or legislation, specifying the categories of equipment concerned;

3. To request the Secretariat to publish on its website separate lists of information received in accordance with paragraphs 1 and 2 above and to update that information when new information is submitted to the Secretariat.

Decision XXXVI/12: Revised data reporting forms

Noting with appreciation the Ozone Secretariat's response to decision XXXV/7, on emissions of HFC-23, in considering revisions to the reporting forms and their instructions,

The Thirty-Sixth Meeting of the Parties decides:

To approve the revised data forms 3 and 6 and the revised instructions for reporting data in accordance with the reporting obligations under the Protocol, as set out in annex II to the addendum to the report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer.

Decision XXXVI/13: Data and information provided by the parties in accordance with Article 7 of the Montreal Protocol

The Thirty-Sixth Meeting of the Parties decides:

1. To note that 192 parties of the 198 parties that should have reported data for 2023 have done so, and that 163 of those parties had reported their data by 30 September 2024 as required under paragraph 3 of Article 7 of the Montreal Protocol on Substances that Deplete the Ozone Layer;

2. To note with appreciation that 80 of the reporting parties had submitted their data for 2023 by 30 June 2024, in accordance with the encouragement in decision XV/15, and 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;

3. To note with concern that six parties, namely Azerbaijan, the Democratic People's Republic of Korea, Djibouti, Iceland, Mali and San Marino, have not reported their data for 2023 as required under paragraph 3 of Article 7 of the Montreal Protocol, and that this places them in non-compliance with their data reporting obligations under the Protocol until such time as the Secretariat receives their outstanding data;

4. To also note with concern that one party operating under paragraph 1 of Article 5, namely Djibouti, that has ratified the Kigali Amendment to the Montreal Protocol and should have submitted baseline data for Annex F substances (hydrofluorocarbons) for the years 2020 to 2022 has not done so as required under paragraph 2 of Article 7 of the Montreal Protocol, and that this places the party in non-compliance with its data reporting obligations under the Montreal Protocol until such time as the Secretariat receives its outstanding baseline data for hydrofluorocarbons;

5. To further note with concern that two parties operating under paragraph 1 of Article 5, namely Côte d'Ivoire and Guinea, that have ratified the Kigali Amendment to the Montreal Protocol and are thus required to submit data on Annex F substances (hydrofluorocarbons) for 2023 submitted data for other controlled substances but not for hydrofluorocarbons, as required under paragraph 3 of Article 7 of the Montreal Protocol, and that this 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 for hydrofluorocarbons;

6. To note 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;

7. To urge the parties listed in paragraphs 3, 4 and 5 above to report the required data to the Secretariat as soon as possible;

8. To request the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol to review the situation of those parties at its seventy-fourth meeting;

9. To encourage parties to continue to report consumption and production data as soon as the figures are available, and preferably by 30 June each year, as encouraged in decision XV/15 and subsequent decisions on the matter.

Decision XXXVI/14: Request for the revision of baseline data by El Salvador and Honduras

Noting that, in decision XIII/15, the Thirteenth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer decided to advise parties requesting changes in reported baseline data for base years to present their requests to the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol, which in turn would work with the Secretariat of the Montreal Protocol and the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol to confirm the justification for the changes and present them to the Meeting of the Parties for approval,

Noting also that decision XV/19 sets out the methodology for the submission of such requests,

The Thirty-Sixth Meeting of the Parties decides:

1. That El Salvador has presented sufficient information, in accordance with decision XV/19, to justify its request for the revision of its consumption data for hydrofluorocarbons for 2020, 2021 and 2022, which are part of the baseline for Group 1 parties under the Kigali Amendment to the Montreal Protocol operating under paragraph 1 of Article 5 of the Montreal Protocol;

2. To approve the request by El Salvador and to revise its consumption data for hydrofluorocarbons for baseline years 2020, 2021 and 2022 as indicated in the following table:

	Previous HFC data (CO_2-eq tonnes)			*New HFC data (CO_2-eq tonnes)*		
Party/year	*2020*	*2021*	*2022*	*2020*	*2021*	*2022*
El Salvador	620 802	985 085	712 414	705 669	784 010	703 349

Abbreviations: CO_2-eq – CO_2-equivalent; HFC – hydrofluorocarbon.

3. That Honduras has presented sufficient information, in accordance with decision XV/19, to justify its request for the revision of its consumption data for hydrofluorocarbons for 2022, which is part of the baseline for Article 5, Group 1 parties under the Kigali Amendment operating under paragraph 1 of Article 5 of the Protocol;

4. To approve the request by Honduras and to revise its consumption data for hydrofluorocarbons for the baseline year 2022 as indicated in the following table:

	Previous HFC data (CO_2-eq tonnes)	*New HFC data (CO_2-eq tonnes)*
Party/year	*2022*	*2022*
Honduras	1 057 751	1 024 898

Abbreviations: CO_2-eq – CO_2-equivalent; HFC – hydrofluorocarbon.

Decision XXXVI/15: Status of the establishment of licensing systems under Article 4B, paragraph 2 bis, of the Montreal Protocol

Noting that Article 4B, paragraph 2 bis, of the Montreal Protocol on Substances that Deplete the Ozone Layer requires each party to establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances listed in Annex F to the Protocol,

Noting with appreciation that 154 of the 160 parties to the Montreal Protocol that have ratified the Kigali Amendment have established import and export licensing systems for Annex F controlled substances as required, and that five parties that have not yet ratified the Kigali Amendment have also reported the establishment and implementation of such licensing systems,

Noting, however, that the three parties listed in the annex to the present decision have not yet reported to the Secretariat on the establishment and operation of their licensing systems pursuant to Article 4B, paragraph 3,

Recognizing that licensing systems provide for data collection and verification, the monitoring of imports and exports of controlled substances, and the prevention of illegal trade,

Recognizing also that the successful phase-out of most controlled substances by parties is largely attributable to the establishment and implementation of licensing systems to control the import and export of ozone-depleting substances,

The Thirty-Sixth Meeting of the Parties decides:

1. To take note with appreciation of the efforts made by the parties in the establishment and operation of licensing systems for Annex F controlled substances under Article 4B, paragraph 2 bis, of the Montreal Protocol;

2. To urge the three parties listed in the annex to the present decision to provide information to the Secretariat on the establishment of licensing systems as a matter of urgency, and no later than 31 March 2025, for consideration by the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol at its seventy-fourth meeting;

3. To urge all parties to the Montreal Protocol that have ratified the Kigali Amendment and that have not yet established and implemented import and export licensing systems for controlled substances under Annex F to the Protocol to do so, and to report that information to the Secretariat within three months of doing so;

4. To request the Secretariat to review periodically the status of the establishment of import and export licensing systems for Annex F controlled substances by all parties to the Protocol, as called for in Article 4B, paragraph 4, of the Protocol.

Annex to decision XXXVI/15

Parties that have not yet reported on the establishment and operation of licensing systems pursuant to Article 4B, paragraph 2 bis

1. Angola
2. Kenya
3. San Marino

Decision XXXVI/16: Non-compliance in 2021 with the provisions of the Montreal Protocol governing consumption and production of the controlled substances in Annex C, Group I (hydrochlorofluorocarbons) by the Democratic People's Republic of Korea

Recalling decision XXXII/6, in which the Thirty-Second Meeting of the Parties noted that the Democratic People's Republic of Korea was in non-compliance with the Montreal Protocol control measures for hydrochlorofluorocarbon production and consumption in 2019, but also noted with appreciation the plan of action submitted by the party to ensure its return to compliance with those measures in 2023,

Noting with concern that the Democratic People's Republic of Korea reported, for 2021, annual production of 24.81 ozone-depleting-potential tonnes (ODP-tonnes) of hydrochlorofluorocarbons and annual consumption of 58.03 ODP-tonnes of hydrochlorofluorocarbons, which is higher than its commitment, as set out in decision XXXII/6, to reduce its production and consumption of hydrochlorofluorocarbons to no greater than 24.80 ODP-tonnes and 58.00 ODP-tonnes, respectively,

Recalling decision XXXV/18 and recommendations 68/4, 69/4, 70/2 and 72/3 of the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol,

Noting that the Democratic People's Republic of Korea submitted all outstanding Article 7 data for 2022 in accordance with its data reporting obligations under Article 7 of the Montreal Protocol, confirming that the party had adhered to its commitments contained in the plan of action to return to compliance, as set out in decision XXXII/6,

Noting, however, that the Democratic People's Republic of Korea has not reported its annual consumption data for controlled substances for 2023 in accordance with paragraph 3 of Article 7 of the Montreal Protocol,

The Thirty-Sixth Meeting of the Parties decides:

1. To note with concern that the Democratic People's Republic of Korea did not strictly adhere to its commitments for 2021 as set out in its plan of action to return to compliance contained in decision XXXII/6 and that the party was in non-compliance with control measures for that substance under the Montreal Protocol for 2021;

2. To express serious concern regarding the fact that the party has not yet, despite several requests by the Implementation Committee in its recommendations 68/4, 69/4, 70/2 and 72/3 and repeated reminders by the Secretariat, provided an explanation for the deviations mentioned in paragraph 1 above, and has not submitted a revised plan of action, if appropriate, to ensure its return to compliance with the control measures of the Montreal Protocol for hydrochlorofluorocarbons in 2023, along with a progress report on the establishment of additional national policies facilitating the phase-out of hydrochlorofluorocarbons that might include, but would not be limited to, bans on imports, on production or on new installations, along with certification of refrigeration technicians and companies, as set out in its plan of action to return to compliance contained in decision XXXII/6;

3. To note with concern that the Democratic People's Republic of Korea has not reported its 2023 data as required under Article 7, paragraph 3, of the Montreal Protocol, and that this places the party in non-compliance with its 2023 data reporting obligations under the Montreal Protocol until such time as the Secretariat receives its outstanding data as also noted in paragraph 3 of decision XXXVI/13;

4. To urge the Democratic People's Republic of Korea to provide an explanation for the deviations, together with Article 7 data for 2023, as a matter of urgency, and no later than 31 March 2025, and, if appropriate, to submit a revised plan of action to ensure its return to compliance with the control measures of the Montreal Protocol for hydrochlorofluorocarbons in 2023, for consideration by the Implementation Committee at its seventy-fourth meeting;

5. To also urge the Democratic People's Republic of Korea to submit a progress report on efforts to establish additional national policies facilitating the phase-out of hydrochlorofluorocarbons that might include, but would not be limited to, bans on imports, on production or on new installations, along with certification of refrigeration technicians and companies, for consideration by the Implementation Committee at its seventy-fourth meeting, as set out in paragraph 5 of decision XXXII/6;

6. To invite the Democratic People's Republic of Korea to send a representative to the Committee's seventy-fourth meeting unless the party has, prior to the meeting, provided the information referred to in paragraphs 3 to 5 above;

7. To caution the Democratic People's Republic of Korea, in accordance with item B of the indicative list of measures that may be taken by the Meeting of the Parties in respect of non-compliance, that if the Democratic People's Republic of Korea 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 hydrochlorofluorocarbons, the substances that are the subject of non-compliance, is ceased so that exporting parties do not contribute to a continuing situation of non-compliance;

8. To continue to monitor closely the progress made by the Democratic People's Republic of Korea in implementing its plan of action and obligations under the Montreal Protocol.

Decision XXXVI/17: Changes in the membership of the Technology and Economic Assessment Panel

The Thirty-Sixth Meeting of the Parties decides:

1. To thank the Technology and Economic Assessment Panel for its outstanding reports, and to thank the co-chairs and members of the Panel for their outstanding service and dedication;

2. To endorse the appointment of Bella Maranion (United States of America) as co-chair of the Technology and Economic Assessment Panel for an additional term of four years;

3. To endorse the appointment of Paolo Altoé (Brazil) as co-chair of the Flexible and Rigid Foams Technical Options Committee for an additional term of four years;

4. To endorse the appointment of Adam Chattaway (United Kingdom of Great Britain and Northern Ireland) as co-chair of the Fire Suppression Technical Options Committee for an additional term of four years;

5. To endorse the appointment of Daniel Verdonik (United States of America) as co-chair of the Fire Suppression Technical Options Committee for an additional term of four years;

6. To endorse the appointment of Suely Carvalho (Brazil) as a senior expert of the Technology and Economic Assessment Panel for an additional of term of two years;

7. To endorse the appointment of Sukumar Devotta (India) as senior expert of the Technology and Economic Assessment Panel for an additional term of two years;

8. To endorse the appointment of Bassam Elassaad (Lebanon) as a senior expert for a term of two years;

9. To endorse the appointment of Ray Gluckman (United Kingdom of Great Britain and Northern Ireland) as a senior expert for an additional term of two years;

10. To endorse the appointment of Marco González (Costa Rica) as a senior expert for an additional term of two years;

11. To endorse the appointment of Shiqiu Zhang (China) as a senior expert for an additional term of two years.

Decision XXXVI/18: Membership of the Implementation Committee

The Thirty-Sixth Meeting of the Parties decides:

1. To note with appreciation the work carried out by the Implementation Committee under the Non-Compliance Procedure for the Montreal Protocol in 2024;

2. To confirm the positions of Chile, Czechia, Iran, Kenya and the United States of America as members of the Committee for one further year and to select Benin, Dominican Republic, the Kingdom of the Netherlands, Montenegro and Saudi Arabia as members of the Committee for a two-year period beginning on 1 January 2025;

3. To note the selection of Martijn Hildebrand (Kingdom of the Netherlands) to serve as President and Linda Kosgei (Kenya) to serve as Vice-President and Rapporteur of the Committee for one year beginning on 1 January 2025.

Decision XXXVI/19: Membership of the Executive Committee of the Multilateral Fund

The Thirty-Sixth Meeting of the Parties decides:

1. To note with appreciation the work carried out by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol with the assistance of the Fund secretariat in 2024;

2. To endorse the selection of Argentina, Bahrain, China, Cuba, Kyrgyzstan, Lesotho and Togo as members of the Executive Committee representing parties operating under paragraph 1 of Article 5 of the Protocol and the selection of Belgium, Canada, Italy, Japan, Lithuania, Sweden and the United States of America as members representing parties not so operating, for one year beginning on 1 January 2025;

3. To note the selection of Alessandro Giuliano Peru (Italy) to serve as Chair and Mathatela Ntsatsi (Lesotho) to serve as Vice-Chair of the Executive Committee for one year beginning 1 January 2025.

Decision XXXVI/20: Co-Chairs of the Open-ended Working Group of the Parties to the Montreal Protocol

The Thirty-Sixth Meeting of the Parties decides:

To endorse the selection of Annie Gabriel (Australia) and Shontelle Wellington (Barbados) as Co-Chairs of the Open-ended Working Group of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer in 2025.

Decision XXXVI/21: Status of ratification of the Kigali Amendment to the Montreal Protocol

The Thirty-Sixth Meeting of the Parties decides:

1. To note that, as at 1 November 2024, 160 parties had ratified, approved or accepted the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer;

2. To urge all parties that have not yet done so to ratify, approve or accept the Kigali Amendment in order to ensure broad participation and achieve the goals of the Amendment.

Decision XXXVI/22: Financial reports and budgets for the Montreal Protocol on Substances that Deplete the Ozone Layer

Recalling decision XXXV/27 on financial reports and budgets for the Montreal Protocol on Substances that Deplete the Ozone Layer,

Taking note of the financial report for the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer for the fiscal year 2023,[9]

Recognizing the voluntary contributions of parties as an essential complement for the effective implementation of the Montreal Protocol,

Recognizing that maintaining a level of contributions that is significantly lower than expenditures will result in a rapid reduction in the cash balance, which will need to be taken into account when considering future contribution levels,

Welcoming decision 6/6 adopted by the United Nations Environment Assembly at its sixth session, which extended the Trust Fund for the Montreal Protocol to 31 December 2030 unless otherwise requested by the appropriate authorities, and noting that the extension of trust funds is an administrative matter that falls under the delegation of the Executive Director and hence will, as of the seventh session of the Environment Assembly, no longer require a decision by Member States,

Welcoming also the continued efficient management by the Secretariat of the finances of the Trust Fund for the Montreal Protocol,

[9] UNEP/OzL.Conv.13/5–UNEP/OzL.Pro.36/5.

The Thirty-Sixth Meeting of the Parties decides:

1. To approve the budget of 6,047,195 United States dollars for 2025 and to take note of the indicative budget for 2026, as set out in table A of annex III to the addendum to the report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, to be considered further by the Thirty-Seventh Meeting of the Parties;

2. To authorize the Executive Secretary, on an exceptional basis, to draw upon the available cash balance for 2025 in an amount of up to 598,900 United States dollars for specific activities listed in table A of annex III to the addendum to the report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, provided that the cash balance is not reduced below the working capital reserve;

3. To approve the contributions to be paid by the parties in the amount of 4,837,756 United States dollars for 2025 and to take note of the contributions for 2026 as set out in table B of annex III to the addendum to the report of the combined thirteenth meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer;

4. To authorize the Executive Secretary to draw down from the cash balance the funds required to cover the shortfall between the level of contributions agreed upon in paragraph 3 above and the approved budget for 2025 as set out in paragraph 1 above;

5. To reaffirm that a working capital reserve shall be maintained at a level of 15 per cent of the annual budget, to be used to meet the final expenditures under the Trust Fund, noting that the working capital reserve shall be set aside from the existing cash balance;

6. To encourage parties and other stakeholders to contribute financially and by other means to assist the members, including those from parties not operating under paragraph 1 of Article 5, of the three assessment panels and their subsidiary bodies with a view to ensuring their continued participation in assessment activities under the Montreal Protocol;

7. To express its appreciation to parties that have paid their contributions for 2024 and prior years, and to urge parties that have not done so to pay their outstanding contributions promptly and in full and all parties to pay their future contributions promptly and in full;

8. To request the Executive Secretary to enter into discussions with any party whose contributions have been outstanding for two or more years with a view to finding a way forward, and to report to the Thirty-Seventh Meeting of the Parties on the outcome of those discussions to enable the parties to further consider how to address the matter;

9. To also request the Executive Secretary:

(a) To continue to provide regular information on earmarked contributions and to include that information, where relevant, in the budget proposals of the Trust Fund to enhance transparency with regard to the actual income and expenses of the Trust Fund;

(b) To continue to prepare fact sheets for the presentation of future budgets;

(c) To ensure the full utilization of the programme support resources available to the Secretariat in 2025 and in later years and, where possible, to offset programme support resources against the administrative components of the approved budget;

(d) To indicate in future financial reports of the Trust Fund the amounts of cash on hand and the status of contributions to the Trust Fund;

10. To further request the Executive Secretary to prepare budgets and work programmes for the years 2026 and 2027, based on the projected needs, for two budget scenarios:

(a) A zero-nominal-growth scenario based on the 2025 approved budget;

(b) A scenario based on recommended adjustments to the zero-nominal-growth scenario, indicating the added costs or savings related thereto;

11. To stress the need to continue to ensure that the budget proposals are realistic and represent the agreed priorities of all parties to help ensure a sustainable and stable fund and cash balance, including contributions;

12. To take note with appreciation of the extension of the Trust Fund until 31 December 2030 granted by the United Nations Environment Assembly at its sixth session.

Decision XXXVI/23: Thirty-Seventh Meeting of the Parties to the Montreal Protocol

The Thirty-Sixth Meeting of the Parties decides:

To convene the Thirty-Seventh Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer at the seat of the Secretariat in Nairobi from 3 to 7 November 2025 unless other appropriate arrangements are made by the Secretariat in consultation with the Bureau.

Annex I

Approved budgets for the Trust Fund for the Vienna Convention for the Protection of the Ozone Layer for 2025, 2026 and 2027 and parties' contributions to the Trust Fund for the Vienna Convention

Table A
Approved budgets for 2025, 2026 and 2027 for the Trust Fund for the Vienna Convention
(United States dollars)

Budget line	*Cost category*	*2025*	*2026*	*2027*
1100	**Employee salaries, allowances and benefits**	**698 000**	**712 000**	**726 000**
1300	**Conference services costs**			
1310	Conference of the Parties	-	-	252 000
1320	Bureau meetings	-	-	20 000
1330	Ozone Research Managers meeting	-	-	20 000
1340	Promotional activities for the protection of the ozone layer	10 000	10 000	10 000
1350	Hospitality	-	-	15 000
	Sub-total: Conference services costs	**10 000**	**10 000**	**317 000**
3300	**Travel of Article 5 parties**			
3340	Bureau meetings	-	-	20 000
3345	Ozone Research Managers meeting	-	-	160 000
	Sub-total: Travel of Article 5 parties	**-**	**-**	**180 000**
1600	**Staff travel on official business**	**30 000**	**30 000**	**30 000**
4000–5000	**Operating costs**			
4100	Expendable equipment	4 000	4 000	6 000
4200	Non-expendable equipment	10 000	10 000	10 000
4300	Rental of premises	20 000	20 000	20 000
5100	Operation and maintenance of equipment	10 000	10 000	10 000
5200	Reporting costs	5 000	5 000	12 000
5300	Miscellaneous costs	20 000	20 000	20 000
	Sub-total: Operating costs	**69 000**	**69 000**	**78 000**
	Total direct costs	**807 000**	**821 000**	**1 331 000**
	Programme Support Costs	104 910	106 730	173 030
	Grand total	**911 910**	**927 730**	**1 504 030**

Appendix to table A
Explanatory notes for the approved budgets for 2025, 2026 and 2027 for the Trust Fund for the Vienna Convention

Cost category	*Budget line*	*Purpose of the amount allocated to the budget line*
Employee salaries, allowances and benefits	1100	The estimates under this category have been increased by 2 per cent for each year of the triennium to allow for inflation and within grade increment for staff salary.
Conference services costs	1300	This cost category caters for the conference services costs for the meetings of the ozone treaties. Such costs include rental of the venue; editing and translation of the meeting documents; interpretation during the meeting and conference servicing staff time and travel.
	1310	The fourteenth meeting of the Conference of the Parties to the Vienna Convention will be held back to back with the Thirty-Ninth Meeting of the Parties to the Montreal Protocol in 2027.
	1320	Two Bureau meetings are scheduled for 2027. One will be held back to back with the thirteenth meeting of the Ozone Research Managers and the other will be combined with meeting of the Bureau of the Thirty-Eighth Meeting of the Parties to the Montreal Protocol.
	1330	The thirteenth meeting of the Ozone Research Managers will be held in 2027 at the headquarters of the World Meteorological Organization in Geneva.
	1340	Promotional activities for the protection of the ozone layer. The allocated amount is generally used along with the budget allocated for communication related activities under the Montreal Protocol Trust Fund.
	1350	The receptions at thirteenth meeting of the Ozone Research Managers and the combined fourteenth meeting of the Conference of the Parties and Thirty-Ninth Meeting of the Parties.
Travel of Article 5 parties	3300	This cost category covers participation of Article 5 parties and countries with economies in transition in the meetings of the ozone treaties. Given that the meeting of the Conference of the Parties to the Vienna Convention is normally held jointly with the Meeting of the Parties to the Montreal Protocol for that year, participation costs are borne by the Trust Fund for the Montreal Protocol.
	3340	Participation costs for the two Bureau meetings to be held in 2027.
	3345	Participation costs for the thirteenth meeting of the Ozone Research Managers.
Travel on official business	1600	The travel of the Secretariat staff to organize and to participate in the thirteenth meeting of the Ozone Research Managers, the fourteenth meeting of the Conference of the Parties, and to provide support to network and capacity-building meetings.
Operating costs	4000 – 5000	The budget allocated to this category is used along with the amount allocated for similar budget lines for operations under the Montreal Protocol Trust Fund.
	4100	The budget line caters for the cost of software licences, stationery, office supplies and consumables.
	4200	The cost of furniture, computers and peripherals are covered here.
	4300	The office rental and utilities cost are paid from this line item.
	5100	Covers the costs of the service-level agreement for multifunction printers, information technology support provided by the United Nations Office at Nairobi, insurance of equipment, and partial amount of annual maintenance and hosting costs for the website and the various digital tools.
	5200	The budget for 2025 and 2026 will provide for general reporting costs that cover the editing and translation of ad hoc documents (not related to meetings) and publications. The 2027 reporting cost will provide for the report of the Ozone Research Managers at their thirteenth meeting and include other general reporting costs mentioned above.
	5300	The Miscellaneous costs budget line replaces the Sundry budget line and includes the costs of office communications, freight and the World Ozone Day celebration.

Table B
Parties' contributions to the Trust Fund for the Vienna Convention
(United States dollars)

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties*	*2027 contributions by parties*
Afghanistan	-	-	-	-
Albania	-	-	-	-
Algeria	0.109	851	851	851
Andorra	-	-	-	-
Angola	-	-	-	-
Antigua and Barbuda	-	-	-	-
Argentina	0.718	5 613	5 613	5 613
Armenia	-	-	-	-
Australia	2.107	16 480	16 480	16 480
Austria	0.678	5 301	5 301	5 301
Azerbaijan	-	-	-	-
Bahamas	-	-	-	-
Bahrain	-	-	-	-
Bangladesh	-	-	-	-
Barbados	-	-	-	-
Belarus	-	-	-	-
Belgium	0.827	6 464	6 464	6 464
Belize	-	-	-	-
Benin	-	-	-	-
Bhutan	-	-	-	-
Bolivia (Plurinational State of)	-	-	-	-
Bosnia and Herzegovina	-	-	-	-
Botswana	-	-	-	-
Brazil	2.010	15 715	15 715	15 715
Brunei Darussalam	-	-	-	-
Bulgaria	-	-	-	-
Burkina Faso	-	-	-	-
Burundi	-	-	-	-
Cabo Verde	-	-	-	-
Cambodia	-	-	-	-
Cameroon	-	-	-	-
Canada	2.624	20 516	20 516	20 516
Central African Republic	-	-	-	-
Chad	-	-	-	-
Chile	0.419	3 279	3 279	3 279
China	15.228	119 084	119 084	119 084
Colombia	0.246	1 920	1 920	1 920
Comoros	-	-	-	-
Congo	-	-	-	-
Cook Islands	-	-	-	-
Costa Rica	-	-	-	-
Côte d'Ivoire	-	-	-	-
Croatia	-	-	-	-
Cuba	-	-	-	-

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties*	*2027 contributions by parties*
Cyprus	-	-	-	-
Czechia	0.339	2 654	2 654	2 654
Democratic People's Republic of Korea	-	-	-	-
Democratic Republic of Congo	-	-	-	-
Denmark	0.552	4 317	4 317	4 317
Djibouti	-	-	-	-
Dominica	-	-	-	-
Dominican Republic	-	-	-	-
Ecuador	-	-	-	-
Egypt	0.139	1 085	1 085	1 085
El Salvador	-	-	-	-
Equatorial Guinea	-	-	-	-
Eritrea	-	-	-	-
Estonia	-	-	-	-
Eswatini	-	-	-	-
Ethiopia	-	-	-	-
European Union	2.496	19 517	19 517	19 517
Fiji	-	-	-	-
Finland	0.416	3 255	3 255	3 255
France	4.311	33 709	33 709	33 709
Gabon	-	-	-	-
Gambia	-	-	-	-
Georgia	-	-	-	-
Germany	6.101	47 707	47 707	47 707
Ghana	-	-	-	-
Greece	0.324	2 537	2 537	2 537
Grenada	-	-	-	-
Guatemala	-	-	-	-
Guinea	-	-	-	-
Guinea-Bissau	-	-	-	-
Guyana	-	-	-	-
Haiti	-	-	-	-
Holy See	-	-	-	-
Honduras	-	-	-	-
Hungary	0.228	1 780	1 780	1 780
Iceland	-	-	-	-
India	1.042	8 150	8 150	8 150
Indonesia	0.548	4 286	4 286	4 286
Iran (Islamic Republic of)	0.370	2 896	2 896	2 896
Iraq	0.128	999	999	999
Ireland	0.438	3 427	3 427	3 427
Israel	0.560	4 380	4 380	4 380
Italy	3.184	24 896	24 896	24 896
Jamaica	-	-	-	-
Japan	8.019	62 711	62 711	62 711
Jordan	-	-	-	-
Kazakhstan	0.133	1 038	1 038	1 038

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties*	*2027 contributions by parties*
Kenya	-	-	-	-
Kiribati	-	-	-	-
Kuwait	0.234	1 827	1 827	1 827
Kyrgyzstan	-	-	-	-
Lao People's Democratic Republic	-	-	-	-
Latvia	-	-	-	-
Lebanon	-	-	-	-
Lesotho	-	-	-	-
Liberia	-	-	-	-
Libya	-	-	-	-
Liechtenstein	-	-	-	-
Lithuania	-	-	-	-
Luxembourg	-	-	-	-
Madagascar	-	-	-	-
Malawi	-	-	-	-
Malaysia	0.347	2 717	2 717	2 717
Maldives	-	-	-	-
Mali	-	-	-	-
Malta	-	-	-	-
Marshall Islands	-	-	-	-
Mauritania	-	-	-	-
Mauritius	-	-	-	-
Mexico	1.219	9 532	9 532	9 532
Micronesia (Federated States of)	-	-	-	-
Monaco	-	-	-	-
Mongolia	-	-	-	-
Montenegro	-	-	-	-
Morocco	-	-	-	-
Mozambique	-	-	-	-
Myanmar	-	-	-	-
Namibia	-	-	-	-
Nauru	-	-	-	-
Nepal	-	-	-	-
Netherlands (Kingdom of the)	1.375	10 750	10 750	10 750
New Zealand	0.308	2 412	2 412	2 412
Nicaragua	-	-	-	-
Niger	-	-	-	-
Nigeria	0.182	1 421	1 421	1 421
Niue	-	-	-	-
North Macedonia	-	-	-	-
Norway	0.678	5 301	5 301	5 301
Oman	0.111	867	867	867
Pakistan	0.114	890	890	890
Palau	-	-	-	-
Panama	-	-	-	-
Papua New Guinea	-	-	-	-
Paraguay	-	-	-	-

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties*	*2027 contributions by parties*
Peru	0.163	1 272	1 272	1 272
Philippines	0.212	1 655	1 655	1 655
Poland	0.836	6 534	6 534	6 534
Portugal	0.352	2 756	2 756	2 756
Qatar	0.269	2 100	2 100	2 100
Republic of Korea	2.570	20 095	20 095	20 095
Republic of Moldova	-	-	-	-
Romania	0.311	2 436	2 436	2 436
Russian Federation	1.863	14 567	14 567	14 567
Rwanda	-	-	-	-
Saint Kitts and Nevis	-	-	-	-
Saint Lucia	-	-	-	-
Saint Vincent and the Grenadines	-	-	-	-
Samoa	-	-	-	-
San Marino	-	-	-	-
Sao Tome and Principe	-	-	-	-
Saudi Arabia	1.182	9 243	9 243	9 243
Senegal	-	-	-	-
Serbia	-	-	-	-
Seychelles	-	-	-	-
Sierra Leone	-	-	-	-
Singapore	0.503	3 935	3 935	3 935
Slovakia	0.155	1 210	1 210	1 210
Slovenia	-	-	-	-
Solomon Islands	-	-	-	-
Somalia	-	-	-	-
South Africa	0.244	1 905	1 905	1 905
South Sudan	-	-	-	-
Spain	2.130	16 660	16 660	16 660
Sri Lanka	-	-	-	-
State of Palestine	-	-	-	-
Sudan	-	-	-	-
Suriname	-	-	-	-
Sweden	0.870	6 800	6 800	6 800
Switzerland	1.132	8 853	8 853	8 853
Syrian Arab Republic	-	-	-	-
Tajikistan	-	-	-	-
Thailand	0.367	2 873	2 873	2 873
Timor-Leste	-	-	-	-
Togo	-	-	-	-
Tonga	-	-	-	-
Trinidad and Tobago	-	-	-	-
Tunisia	-	-	-	-
Türkiye	0.844	6 597	6 597	6 597
Turkmenistan	-	-	-	-
Tuvalu	-	-	-	-
Uganda	-	-	-	-

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties*	*2027 contributions by parties*
Ukraine	-	-	-	-
United Arab Emirates	0.634	4 957	4 957	4 957
United Kingdom of Great Britain and Northern Ireland	4.368	34 154	34 154	34 155
United Republic of Tanzania	-	-	-	-
United States of America	21.963	171 748	171 748	171 748
Uruguay	-	-	-	-
Uzbekistan	-	-	-	-
Vanuatu	-	-	-	-
Venezuela (Bolivarian Republic of)	0.175	1 366	1 366	1 366
Vietnam	-	-	-	-
Yemen	-	-	-	-
Zambia	-	-	-	-
Zimbabwe	-	-	-	-
Total	**100.000**	**782 000**	**782 000**	**782 000**

Annex II

Revised data forms and instructions pursuant to decision XXXVI/12

Article 7 data reporting forms and associated instructions and guidelines

Questionnaire

Party:_____Reporting year:_____

Before beginning the questionnaire, respondents are requested to read the following sections of the data reporting instructions and guidelines document carefully: (a) Section 1: Introduction; (b) Section 3: General instructions; and (c) Section 4: Definitions. Respondents are encouraged to refer to the data reporting instructions and guidelines as necessary when completing the data forms.

Questionnaire

1.1. Did your country **import** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 1 and go to question 1.2. If Yes, please complete data form 1. Please read **instruction I** (on data on imports of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.2. Did your country **export or re-export** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 2 and go to question 1.3. If Yes, please complete data form 2. Please read **instruction II** (on data on exports of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.3. Did your country **produce** CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 3 and go to question 1.4. If Yes, please complete data form 3. Please read **instruction III** (on data on production of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.4. Did your country **destroy** any ozone-depleting substances or HFCs in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 4 and go to question 1.5. If Yes, please complete data form 4. Please read **instruction IV** (on data on destruction of controlled substances) of the data reporting instructions and guidelines document carefully before filling in the form.

1.5. Did your country **import from** or **export or re-export to non-parties** in the reporting year?

Yes [ ] No [ ]

If No, ignore data form 5 and go to question 1.6. If Yes, please complete data form 5. Please read **instruction V** (on data on imports from and exports to non-parties) of the data reporting instructions and guidelines document carefully, particularly the definition of non-parties, before filling in the form.

1.6. Did your country **generate** the substance HFC-23 in the reporting year from any facility that produces (manufactures) Annex C Group I or Annex F substances?

Yes [ ] No [ ]

If No, ignore data form 6. If Yes, please complete data form 6. Please read **instruction VI** (on data on emissions of Annex F Group II substance – HFC-23) of the data reporting instructions and guidelines document carefully before filling in the form.

Name of reporting officer: .....

Signature:.....

Designation:.....

Organization: .....

Postal address: .....

Country:.....

Phone:.....

Email: .....

Date: .....

Data form 1 on imports

1. Fill in this form only if your country imported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction I carefully before filling in this form.

DATA FORM 1

DATA ON IMPORTS

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Party: _____

Period: January – December 20____

A7_Dataform_2024

(1) *Annex/group*	*(2)* *Substance*	*Total quantity imported for all uses*		*(5)* *Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses**	
		(3) *New*	*(4)* *Recovered and reclaimed*		*(6)* *Quantity*	*(7)* *Decision / type of use* or remarks*
A-Group I	CFC-11 ($CFCl_3$)					
	CFC-12 (CF_2Cl_2)					
	CFC-113 ($C_2F_3Cl_3$)					
	CFC-114 ($C_2F_4Cl_2$)					
	CFC-115 (C_2F_5Cl)					
A-Group II	Halon-1211 (CF_2BrCl)					
	Halon-1301 (CF_3Br)					
	Halon-2402 ($C_2F_4Br_2$)					
B-Group I	CFC-13 (CF_3Cl)					
B-Group II	Carbon tetrachloride (CCl_4)					
B-Group III	Methyl chloroform, i.e., 1,1,1-trichloroethane ($C_2H_3Cl_3$)					
Comments:						

[1] Tonne = Metric ton.

* Against each substance imported for exempted essential, critical or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

(1) Annex/group	*(2) Substance*	*Total quantity imported for all uses*		*(5) Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses**	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use* or remarks*
C-Group I	HCFC-21** ($CHFCl_2$)					
	HCFC-22** (CHF_2Cl)					
	HCFC-31 (CH_2FCl)					
	HCFC-123** ($CHCl_2CF_3$)					
	HCFC-124** ($CHFClCF_3$)					
	HCFC-133 ($C_2H_2F_3Cl$)					
	HCFC-141b** (CH_3CFCl_2)					
	HCFC-142b** (CH_3CF_2Cl)					
	HCFC-225 ($C_3HF_5Cl_2$)					
	HCFC-225ca ($CF_3CF_2CHCl_2$)					
	HCFC-225cb (CF_2ClCF_2CHClF)					
C-Group II	HBFCs					
C-Group III	Bromochloromethane (CH_2BrCl)					
E-Group I	Methyl bromide (CH_3Br)					
					Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications within your country	
Comments:						

Note: As per paragraph 5 bis of Article 2 of the Protocol, any transfer of HCFC consumption by parties not operating under paragraph 1 of Article 5 shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance imported for exempted essential, critical or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

** Identifies the most commercially viable substances with ozone-depleting-potential (ODP) values listed against them to be used for the purposes of the Protocol.

(1) Annex/group	(2) Substance	Total quantity imported for all uses		(5) Quantity of new substance imported for feedstock uses	Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses*	
		(3) New	(4) Recovered and reclaimed		(6) Quantity	(7) Decision / type of use* or remarks
F-Group I	HFC-32 (CH_2F_2)					
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF3)					
Mixtures containing any controlled substance(s) – applicable to all substances, not just HFCs (add additional rows or pages as required for mixtures not listed below)						
R-404A (HFC-125 = 44%, HFC-134a = 4%, HFC-143a = 52%)						
R-407A (HFC-32 = 20%, HFC-125 = 40%, HFC-143a = 40%)						
R-407C (HFC-32 = 23%, HFC-125 = 25%, HFC-143a = 52%)						
R-410A (HFC-32 = 50%, HFC-125 = 50%)						
R-507A (HFC-125 = 50%, HFC-143a = 50%)						
R-508B (HFC-23 = 46%, PFC-116 = 54%)						
Comments:						

Note: When reporting mixtures, reporting of controlled substances should not be duplicated. Parties may choose to report imports of individual controlled substances, total quantities of mixtures imported, or a combination of both, provided that the amounts of imported controlled substances are not reported more than once. If a non-standard mixture not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remark" column or in the "comments" box above.

* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above. In case of multiple exemptions per substance for some of the controlled substances, multiple entries may be used for those substances to report on those exemptions.

Annex to DATA FORM 1 - Exporting parties for quantities reported as imports **A7_Dataform_2024**

Note: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and the information in the annex is to be provided on a voluntary basis (decision XXIV/12)

(1) Substance or Mixture	*(2) Exporting party for quantities reported as imports*	*Total quantity imported for all uses*		*(5) Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses**	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use* or remarks*
Methyl bromide (CH_3Br)						
					Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications within your country	

Comments:

* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 2 on exports

1. Fill in this form only if your country exported or re-exported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction II carefully before filling in this form.

DATA FORM 2 **A7_Dataform_2024**

DATA ON EXPORTS*

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Party: _____ Period: January – December 20____

(1) Substance or Mixture	*(2) Country of destination of exports***	*Total quantity exported for all uses*		*(5) Quantity of new substance exported for feedstock****	*Quantity of new substance exported for exempted essential, critical, high-ambient-temperature or other uses*****	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use***** or remarks*
Methyl bromide (CH_3Br)						
					Quantity of new methyl bromide exported to be used for quarantine and pre-shipment applications	
Comments:						

[1] Tonne = Metric ton.

Note: If a non-standard mixture not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remark" column or in the "comments" box above.

* Includes re-exports. Ref. decisions IV/14 and XVII/16, paragraph 4.

** Reporting of countries of destination is not a requirement under Article 7. In paragraph 4 of decision VII/9, it was decided that parties should report on the destination of Annex A and Annex B substances (new, recovered or reclaimed) that are exported. Paragraph 4 of decision XVII/16 requested a revision of the reporting formats to cover the export of all controlled substances contained in the annexes of the Protocol, and urged the Parties to implement the revised reporting format expeditiously.

*** Do not deduct from total production in column 3 of data form 3 (data on production).

**** Against each substance exported for exempted essential, critical, high-ambient-temperature or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 3 on production / generation

1. Fill in this form only if your country produced CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs or generated HFC-23
2. Please read instruction III carefully before filling in this form

DATA FORM 3 **A7_Dataform_2024**

DATA ON PRODUCTION / GENERATION

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Party: _____

Period: January – December 20____

(1) Annex/group	*(2) Substance*	*(3) Total production for all uses*	*(4) Production for feedstock uses within your country*	*Production for exempted essential, critical, high-ambient-temperature or other uses within your country**		*(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5*
				(5) Quantity	*(6) Decision / type of use* or remarks*	
A-Group I	CFC-11 ($CFCl_3$)					This column is no longer applicable to Annex A and B substances (CFCs, halons, CCl_4 and methyl chloroform)
	CFC-12 (CF_2Cl_2)					
	CFC-113 ($C_2F_3Cl_3$)					
	CFC-114 ($C_2F_4Cl_2$)					
	CFC-115 (C_2F_5Cl)					
A-Group II	Halon-1211 (CF_2BrCl)					
	Halon-1301 (CF_3Br)					
	Halon-2402 ($C_2F_4Br_2$)					
B-Group I	CFC-13 (CF_3Cl)					
B-Group II	Carbon tetrachloride (CCl_4)					
B-Group III	Methyl chloroform, i.e., 1,1,1-trichloroethane ($C_2H_3Cl_3$)					

Comments:

[1] Tonne = Metric ton.

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance produced for exempted essential, critical or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

(1) Annex/group	*(2) Substance*	*(3) Total production for all uses*	*(4) Production for feedstock uses within your country*	*Production for exempted essential, critical, high-ambient-temperature or other uses within your country**		*(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5*
				(5) Quantity	*(6) Decision / type of use* or remarks*	
C-Group I	HCFC-21** ($CHFCl_2$)					
	HCFC-22** (CHF_2Cl)					
	HCFC-31 (CH_2FCl)					
	HCFC-123** ($CHCl_2CF_3$)					
	HCFC-124** ($CHFClCF_3$)					
	HCFC-133 ($C_2H_2F_3Cl$)					
	HCFC-141b** (CH_3CFCl_2)					
	HCFC-142b** (CH_3CF_2Cl)					
	HCFC-225 ($C_3HF_5Cl_2$)					
	HCFC-225ca ($CF_3CF_2CHCl_2$)					
	HCFC-225cb (CF_2ClCF_2CHClF)					
C-Group II	HBFCs					This column is no longer applicable to Annex/group C/II, C/III and E/I substances (HBFCs, BCM and methyl bromide)
C-Group III	Bromochloromethane (CH_2BrCl)					
E-Group I	Methyl bromide (CH_3Br)			*Total quantity of new methyl bromide produced for quarantine and pre-shipment applications within your country and for export*		

Comments:

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance produced for exempted essential, critical or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

** Identifies the most commercially viable substances with ozone-depleting-potential (ODP) values listed against them to be used for the purposes of the Protocol.

(1) Annex/group	*(2) Substance*	*(3) Total production for all uses*	*(4) Production for feedstock uses within your country*	*Production for exempted essential, critical, high-ambient-temperature or other uses within your country**		*(7) Production for supply to Article 5 countries in accordance with Articles 2A-2H and 5*
				(5) Quantity	*(6) Decision / type of use* or remarks*	
F-Group I	HFC-32 (CH_2F_2)					This column is not applicable to Annex F substances (HFCs)
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF_3)					
	HFC-23 (CHF_3)[1]					

Comments:

Note: As per paragraph 5 of Article 2 of the Protocol, any transfer of production shall be notified to the Secretariat, no later than the time of the transfer, by each of the parties concerned, stating the terms of such transfer and the period for which it is to apply.

* Against each substance produced for exempted essential, critical, high-ambient-temperature or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

[1] Unintentional generation.

(1) Facility name or identifier	*(2) Total amount generated* (tonnes)*	*(3) Amount stored at the beginning of the year*	*(4) Amount generated and captured (tonnes)*			*(5) Amount used for feedstock without prior capture (tonnes)*	*(6) Amount destroyed in the facility without prior capture (tonnes)*	*(7) Amount of generated emissions (tonnes)*	*(8) Amount stored at the end of the year*	*(9) Remarks*
			(4a) For uses excluding feedstocks	*(4b) For feedstock use in your country*	*(4c) For destruction[2]*					

Comments:

[1] Tonne = Metric ton.
* "Total amount generated" refers to the total amount whether captured or not.
[2] This includes amounts transferred to other facilities.

Data form 4 on destruction of controlled substances

1. Fill in this form only if your country destroyed CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs	**DATA FORM 4**	**A7_Dataform_2024**
2. Please read instruction IV carefully before filling in this form	**DATA ON QUANTITY OF SUBSTANCES DESTROYED** in tonnes[1] (not ODP or CO_2-equivalent tonnes) **Annex A, B, C, E and F substances**	
Party: _____	Period: January – December 20____	

(1) *Substance or Mixture*	*(2)* *Quantity destroyed*	*(3)* *Remarks*

Comments:

[1] Tonne = Metric ton.

Note: If the composition of a destroyed mixture is known, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the remarks or comments section of the form or indicate a standard mixture as listed in section 11 of the data reporting instructions and guidelines.

Data form 5 on trade with non-parties

1. Fill in this form only if your country imported or exported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane or methyl bromide from or to non-parties

2. Please read instruction V carefully before filling in this form.

DATA FORM 5 **A7_Dataform_2024**

DATA ON IMPORTS FROM AND/OR EXPORTS TO NON-PARTIES*

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C and E substances

Party: _____

Period: January – December 20____

(1) *Substance or Mixture*	*(2)* *Exporting party for quantities reported as imports OR Country of destination of exports***	*Quantity of imports from non-parties**		*Quantity of exports to non-parties**		*(7)* *Remarks*
		(3) *New imports*	*(4)* *Recovered and reclaimed imports*	*(5)* *New exports*	*(6)* *Recovered and reclaimed exports*	
Comments:						

[1] Tonne = Metric ton.

Note: If a non-standard mixture not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remark" column or in the "comments" box above.

* See definition of "non-parties" in Instruction V.

** Reporting of information on "exporting parties for quantities reported as imports" and "countries of destination of exports" is not a requirement under Article 7 of the Protocol, and the information is to be provided on a voluntary basis.

Data form 6 on HFC-23 emissions

1. Fill in this form only if your country generated HFC-23 from any facility that produced (manufactured) Annex C Group I or Annex F substances

2. Please read instruction VI carefully before filling in this form

DATA FORM 6

A7_Dataform_2024

DATA ON QUANTITY OF EMISSIONS OF HFC 23 FROM FACILITIES MANUFACTURING ANNEX C GROUP I OR ANNEX F SUBSTANCES

in tonnes[1] (not ODP or CO2-equivalent tonnes)

Party: _____

Period: January – December 20____

Note: Information in columns 2 to 6 and column 8 is excluded from the reporting requirements under Article 7 of the Protocol and is provided on a voluntary basis.

(1) Facility name or identifier	*(2) Total amount generated* (tonnes)*	*(3) Amount stored at the beginning of the year*	*(4) Amount generated and captured (tonnes)*			*(5) Amount used for feedstock without prior capture (tonnes)*	*(6) Amount destroyed in the facility without prior capture (tonnes)*	*(7) Amount of generated emissions (tonnes)*	*(8) Amount stored at the end of the year*	*(9) Remarks*
			(4a) For uses excluding feedstocks	*(4b) For feedstock use in your country*	*(4c) For destruction[2]*					

Comments:

[1] Tonne = Metric ton.
* "Total amount generated" refers to the total amount whether captured or not.
[2] This includes amounts transferred to other facilities.

Appendix I

Data reporting instructions and guidelines

Section 1: Introduction

1.1 The attached data forms have been designed to make reporting easier for the parties. The reporting is prescribed by Article 7 of the Montreal Protocol and further described in various decisions of the meeting of the parties. Some decisions introduce additional items that parties may report voluntarily.

1.2 The data reported in accordance with the data forms will be used to determine the calculated levels of production and consumption, upon which the control measures are based.

1.3 The major features of the forms are as follows:

(a) Six separate data forms are provided for imports, exports, production, destruction, trade with non-parties and emissions of controlled substances. Please use only those data forms applicable to your country and ignore the other forms, after ticking off the respective "No" box in the questionnaire. For example, many parties only import and do not export, produce, destroy or trade with non-parties in any of the substances. If this is the case, please use only data form 1 on imports and ignore the other forms, after ticking off the "No" boxes for questions 1.2 – 1.6 on the questionnaire.

(b) A row has been provided in data forms 1 (imports) and 3 (production) for each of the substances in Annex A, Annex B Groups II and III, Annex E and Annex F. However, for categories of "Other CFCs" (Annex B Group I) and HCFCs (Annex C Group I), the form is made shorter by providing rows only for substances commonly reported by parties in the past. A few blank rows are provided for more substances, if needed. HBFCs and BCM (Annex C Groups II and III) were phased out by all parties immediately upon inclusion in the list of controlled substance; hence, one row has been provided for them as a formality only. You may use the computerized forms supplied by the Secretariat or paper forms. Parties who use the computerized forms can easily add more rows as needed; parties using paper forms are free to add pages as required.

(c) The following are some of the different categories of uses of controlled substances that need to be reported:

- Feedstock uses for all substances
- Essential uses, including laboratory and analytical uses, for substances as approved by the meeting of the parties from time to time
- Quarantine and pre-shipment applications for methyl bromide
- Process agent uses for specific applications as approved in table A of decision X/14 and updated periodically by the meeting of the parties
- Critical or emergency uses of methyl bromide as approved from time to time
- Exemption for high-ambient-temperature parties

It is necessary for each party to specify how much of its production, export or import is used for these categories. Where applicable, the Secretariat will deduct these quantities from the total figures. Provision is made in the data forms for these categories. For exempted essential, critical, high-ambient-temperature or other uses, provision has also been made for parties to specify the decision of the meeting of the parties that approved the use.

(d) The same forms can be used for reporting for baseline years and other years. It should be noted that paragraphs 1 and 2 of Article 7 of the Montreal Protocol both provide that the parties may submit the best possible estimates of data for the base years if actual data are not available.

(e) The basis for reporting requirements and definitions are given in sections 2 and 4 below respectively.

(f) A "remarks" column has been provided at the end of each row, and a "comments" box has been provided at the end of each form, for parties to include any additional information that they believe would assist the Secretariat in processing their data report.

Section 2: Reporting of data and clarifications associated with Article 7 of the Montreal Protocol

Reporting set out under Article 7 of the Montreal Protocol, and related requests pursuant to decisions by the meeting of the parties

Basis for reporting under Article 7	*Information to be provided*
Annual data reporting under Article 7	**(reported annually)**
(a) Article 7 paragraphs 3, 3 bis and 3 ter	Statistical data on production of each of the controlled substances Amounts used for feedstock Amounts destroyed by technologies approved by the parties Imports from and exports to parties and non-parties respectively Statistical data on the amount of methyl bromide used for quarantine and pre-shipment applications Statistical data on imports and exports of recycled halons and HCFCs Statistical data on emissions of HFC-23 per facility in accordance with paragraph 1 (d) of Article 3 of the Protocol
(b) To verify implementation of Articles 2A to 2F and 2H	Excess production above the control limit in order to satisfy the basic domestic needs of parties operating under paragraph 1 of Article 5 (Article 5 parties)
(c) Decision IV/11, paragraph 3	Actual quantities of controlled substances destroyed
(d) Decision VII/30, paragraph 1	Volumes of controlled substances imported for feedstock uses by importing countries
(e) Decision XI/13, paragraph 3	Amount of methyl bromide used for quarantine and pre-shipment applications
(f) Decision XVII/16, paragraph 4, and decision VII/9, paragraph 4	Types, quantities and destinations of exports of all controlled substances
(g) Decision XXIV/12, paragraph 1	Types, quantities and exporting party for quantities reported as imports
Baseline data reporting under Article 7	**(reported once)**
Article 7, paragraphs 1 and 2	Statistical data on production, imports and exports of each of the controlled substances in: – Annex A, for the year 1986 – Annex B and groups I and II of Annex C, for the year 1989 – Annex E, for the year 1991 – Annex F: by parties not operating under paragraph 1 of Article 5, for the years 2011 to 2013; by Article 5, group 1, parties, for the years 2020 to 2022; and by Article 5, group 2, parties, for the years 2024 to 2026 or the best possible estimates of such data where actual data are not available, within three months of entry into force

Definitions and clarifications on calculating production and consumption using the reported data

Basis for clarification	*Guidance provided*
a) Article 1, paragraph 5	Subtract the amount destroyed by technologies approved by the parties and the amount entirely used as feedstock in the manufacture of other chemicals from production. The amount recycled and reused is not to be considered as production.
b) Article 1, paragraph 6	"Consumption" means production plus imports minus exports of controlled substances.
c) Article 2H, paragraph 6	Calculated levels of consumption and production for methyl bromide shall not include the amounts used for quarantine and pre-shipment applications.
d) Article 3, paragraph 1 (c)	Beginning on 1 January 1993, any export of controlled substances to non-parties shall not be subtracted in calculating the consumption level of the exporting party. Note that HFCs are excluded from the requirement to report on trade with non-parties. This provision therefore does not apply to HFCs.
e) Decision IV/24, paragraph 2	The import and export of recycled and used controlled substances should not be taken into account for calculating consumption (except when calculating the base year consumption under paragraph 1 of Article 5 of the Protocol).
f) Decisions X/14, paragraph 3	Quantities of controlled substances produced or imported for the purpose of being used as process agents in plants and installations in operation before 1 January 1999 should not be taken into account in the calculation of production and consumption from 1 January 2002 onwards.
g) Decision VII/30, paragraph 1	The amount of controlled substances produced and exported for the purpose of being entirely used as feedstock in the manufacture of other chemicals in importing countries should not be the subject of the calculation of production or consumption in exporting countries.
h) Decision VII/30, paragraph 2	The amount of controlled substances entirely used as feedstock in the manufacture of other chemicals should not be the subject of calculation of consumption in importing countries.
i) Paragraphs 145–147 of the report of the Eighteenth Meeting of the Parties	Calculated production and consumption figures should be reported and reviewed at one decimal place only.
j) Decision XXIII/30	Use two decimal places when presenting and analysing for compliance hydrochlorofluorocarbon baselines established after the Twenty-Third Meeting of the Parties and annual hydrochlorofluorocarbon data reported under Article 7 for 2011 and later years.
k) Decision XXX/10, paragraphs 3 and 4	Use the GWP values of HCFC-141b and HCFC-142b for HCFC-141 and HCFC-142, respectively, and GWP values listed for HCFC-123 and HCFC-124 for HCFC-123** and HCFC-124**, respectively when calculating the HFC baselines of affected parties.
l) Paragraph 7.4 of the data reporting instructions and guidelines, and data form 3 on production	Amounts of HFC-23 captured for destruction or feedstock use will not be counted as production as per Article 1.

Section 3: General instructions

3.1 Parties are requested to report the production and consumption of bulk controlled substances in tonnes, without multiplying by the relevant ozone-depleting-potential or global-warming-potential values.

3.2 In order to avoid duplication, quantities contained in manufactured products should not be included in a country's consumption, regardless of whether the end-products are imported or exported.

3.3 It is crucial that data be provided separately for each individual controlled substance listed in the forms. Further, as requested in decisions XXIV/14 and XXIX/18, parties should enter a number in each cell in the data reporting forms that they submit, including zero, where appropriate, rather than leaving any cells blank. This provision does not apply to optional or voluntary data in the reporting forms.

3.4 When calculating production, the Montreal Protocol allows countries to deduct amounts of controlled substances destroyed and amounts used for feedstock and for quarantine and pre-shipment applications. However, when reporting production data, parties **should not deduct** these figures from their data. The Secretariat will make the necessary deductions.

3.5 Parties with approved essential-use exemptions should report to the Secretariat on the amounts of controlled substances produced or consumed for those uses using the accounting form approved by decision VIII/9, paragraph 9.

3.6 Parties with approved critical-use exemptions should report to the Secretariat on the amounts of methyl bromide produced or consumed for those uses using the form approved by decision Ex.I/4, paragraph 9 (f) and decision Ex.II/1, paragraph 3.

3.7 Parties might import or export mixtures containing controlled substances, in particular Annex F substances, rather than its constituent controlled substances. If this is the case, the parties may choose to report the quantity of the mixture in the designated section on the form. If you choose to report mixtures, please take care to ensure that the quantities reported are those of the mixtures, not their individual constituents. The Secretariat will calculate the quantity of each pure substance from the mixtures and will include the appropriate quantities of those pure substances in the reported data. An illustrative list of mixtures containing controlled substances with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "WhatGas?" page of the OzonAction website.[10] This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

3.8 Parties listed in Appendix II to decision XXVIII/2 that produce or consume controlled substances under the high-ambient-temperature exemption should also report separately production and consumption data to the Secretariat for the subsectors to which the exemption applies (decision XXVIII/2, paragraph 30). Subsector-specific information should be provided by the country using the exemption, not by the producer country. Production under the high-ambient-temperature exemption should only be reported if the production is for use internally by the producing country, not for export.

Section 4: Definitions

4.1 "Consumption" means production plus imports minus exports of controlled substances (Montreal Protocol, Article 1).

4.2 "Controlled substance" means a substance in Annex A, Annex B, Annex C, Annex E or Annex F to the Protocol, whether existing alone or in a mixture. It includes the isomers of any such substance except as specified in the relevant annex, but excludes any controlled substance or mixture that is in a manufactured product other than a container used for the transportation or storage of that substance (Montreal Protocol, Article 1).

[10] https://www.unep.org/ozonaction/resources/mobile-app-whatgas/whatgas.

4.3 "Destruction process" is one that, when applied to controlled substances, results in the permanent transformation or decomposition of all or a significant portion of such substances (decisions I/12F, IV/11, V/26 and VII/35).

4.4 "Production" means the amount of controlled substances produced, minus the amount destroyed by technologies approved by the parties and minus the amount entirely used as feedstock in the manufacture of other chemicals. The data forms prescribe reporting of feedstock use and of quantities destroyed separately, and reporting of total production **without** deduction. The Secretariat will make the necessary deduction.

4.5 Amounts recovered, reclaimed or recycled (or reused) are not to be considered as "production" (Montreal Protocol, Article 1), even though they are to be reported (Article 7 of the Protocol).

"Recovery, recycling and reclamation" have been defined by the parties (decision IV/24) as follows:

(a) Recovery: The collection and storage of controlled substances from machinery, equipment, containment vessels, etc., during servicing or prior to disposal;

(b) Recycling: The reuse of a recovered controlled substance following a basic cleaning process such as filtering and drying. For refrigerants, recycling normally involves recharge back into equipment. It often occurs "on-site";

(c) Reclamation: The re-processing and upgrading of a recovered controlled substance through such mechanisms as filtering, drying, distillation and chemical treatment in order to restore the substance to a specified standard of performance. It often involves processing "off-site" at a central facility.

4.6 "Quarantine and pre-shipment applications" have been defined by the parties (decision VII/5) as follows:

(a) "Quarantine applications", with respect to methyl bromide, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control, where:

(i) Official control is that performed by, or authorized by, a national plant, animal or environmental protection or health authority;

(ii) Quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled.

(b) "Pre-shipment applications" are those treatments applied directly preceding and in relation to export, to meet the phytosanitary or sanitary requirements of the importing country or existing phytosanitary or sanitary requirements of the exporting country.

4.7 The Eleventh Meeting of the Parties decided in decision XI/12 that pre-shipment applications are those non-quarantine applications applied within 21 days prior to export to meet the official requirements of the importing country or existing official requirements of the exporting country. Official requirements are those that are performed by, or authorized by, a national plant, animal, environmental, health or stored product authority.

4.8 On transhipment and re-export of substances, the Fourth Meeting of the Parties decided (decision IV/14):

"To clarify Article 7 of the amended Protocol so that it is understood to mean that, in cases of tran(s)shipment of controlled substances through a third country (as opposed to imports and subsequent re-exports), the country of origin of the controlled substances shall be regarded as the exporter and the country of final destination shall be regarded as the importer. In such cases, the responsibility for reporting data shall lie with the country of origin as the exporter and the country of final destination as the importer. Cases of import and re-export should be treated as two separate transactions; the country of origin would report shipment to the country of intermediate destination, which would subsequently report the import from the country of origin and export to the country of final destination, while the country of final destination would report the import."

4.9 With respect to trade in bulk methyl bromide, the Eighth Meeting of the Parties decided (decision VIII/14):

"To clarify decision I/12A of the First Meeting of the Parties as follows: trade and supply of methyl bromide in cylinders or any other container will be regarded as trade in bulk in methyl bromide."

4.10 "Regional economic integration organization" means an organization constituted by sovereign States of a given region that has competence in respect of matters governed by the Vienna Convention for the Protection of the Ozone Layer or its protocols and has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to the instruments concerned. The only such organization for the purpose of the Montreal Protocol is the European Union.

4.11 The Montreal Protocol stipulates, under paragraph 8 (a) of Article 2, that any parties which are member States of a regional economic integration organization as defined above may agree that they shall jointly fulfil their obligations respecting consumption provided that their total combined calculated level of consumption under Articles 2A to 2J of the Protocol does not exceed the levels required by those articles.

Section 5: Instruction I on data on imports of controlled substances (data form 1)

5.1 Please use data form 1 to report data on imports of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs).

5.2 All the substances in Annex A, Annex B (Groups II and III) and Annex F are listed in column 2 of data form 1. For Annex B Group I (other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances that have been reported by parties in the past are listed. HBFCs and BCM were phased out by all parties immediately upon inclusion in the list of controlled substance, and hence for HBFCs and BCM one row has been provided as a formality only. If you are importing controlled substances other than those listed, please use the blank space to report data on those substances, and use additional pages, if necessary.

5.3 If your country imported mixtures of controlled substances, e.g., R-410A (50% HFC-32; 50% HFC-125), you may choose to report either the quantity of the mixture or the individual constituents of the mixture. If you choose to report mixtures rather than their individual constituents, please take care to ensure that the quantities reported are those of the mixtures, not their individual constituents. The Secretariat will calculate the quantity of the individual pure controlled substances contained in the mixture and enter the appropriate data under each controlled substance. An illustrative list of mixtures with their compositions is given in section 11 of these data reporting instructions and guidelines. If the mixture being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "WhatGas?" page on the OzonAction website.[11] This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

5.4 Please enter the number of tonnes imported in column 3 of data form 1 for each substance imported. If you did not import any of the substances listed, or if you have imported only recovered or reclaimed substances, please enter a zero in column 3, "New", for each substance. If you imported any recovered or reclaimed substances, please enter the data in column 4.

5.5 When calculating a party's consumption, substances used as feedstock for the production of other chemicals are exempted, as such substances are completely transformed in the manufacturing process of the new chemical. In reporting total quantities of new substances imported in column 3, **do not deduct** the quantities imported for feedstock reported in column 5. Similarly, **do not deduct** the quantities imported for exempted essential, critical, high-ambient-temperature or other uses reported in column 6. The Secretariat will make the necessary deductions. In column 7, please indicate, for each type of controlled substance imported for exempted essential, critical, high-ambient-temperature or other uses, the decision of the meeting of the parties that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box at the bottom of the form.

5.6 When calculating a party's consumption of methyl bromide, the quantities used for quarantine and pre-shipment applications are excluded. In data form 1, please enter the quantities of methyl

[11] https://www.unep.org/ozonaction/resources/mobile-app-whatgas/whatgas.

bromide imported for quarantine and pre-shipment applications separately at the bottom of the form, and **do not deduct them** from the total quantity imported. The Secretariat will make the necessary deductions.

5.7 Decision XXIV/12, paragraph 1, requested the Secretariat to revise the reporting forms resulting from decision XVII/16 to include an annex indicating the exporting party for the quantities reported as imports, noting that the annex is excluded from the reporting requirements under Article 7 of the Protocol, and that the information in the annex would be provided on a voluntary basis. If a particular controlled substance is imported from more than one country, please indicate the quantity imported from each country separately. Please see the example below.

Annex to data form 1 - Exporting parties for quantities reported as imports **A7_Dataform_2024**

Note: This annex is excluded from the reporting requirements under Article 7 of the Protocol, and the information in the annex is to be provided on a voluntary basis (decision XXIV/12)

(1) Substance or mixture	*(2) Exporting party for quantities reported as imports*	*Total quantity imported for all uses*		*(5) Quantity of new substance imported for feedstock uses*	*Quantity of new substance imported for exempted essential, critical, high-ambient-temperature or other uses**	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use* or remark*
HCFC-22	**Country AAA**	**50**				
HCFC-22	**Country BBB**	**75**				
HFC-134a	**Country AAA**	**80**				
HFC-134a	**Country CCC**	**60**				
HFC-134a	**Country DDD**	**30**				
Methyl bromide (CH_3Br)					*Quantity of new methyl bromide imported to be used for quarantine and pre-shipment applications within your country*	

Comments:

* Against each substance imported for exempted essential, critical, high-ambient-temperature or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

Section 6: Instruction II on data on exports of controlled substances (data form 2)

6.1 Please use data form 2 to report data on exports, including re-exports, of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs).

6.2 Data on re-exports of the substances listed above should also be included in this form. Decision IV/14 clarified that cases of import and re-export should be treated as two separate transactions, so that the country of intermediate destination would report both the import from the country of origin and re-export to the country of final destination.

6.3 The first column ("Substance") has been left blank because each party may export different substances. Please add the names and relevant information of only those substances being exported by your country.

6.4 If your country exported mixtures of controlled substances, e.g., R-410A (50% HFC-32; 50% HFC-125), you may choose to report either the quantity of the mixture, or the individual constituents of the mixture. If you choose to report mixtures rather than their individual constituents, please take care to ensure that quantities reported are those of the mixtures, not their individual constituents. The Secretariat will calculate the quantity of the individual pure controlled substances contained in the mixture and enter the appropriate data under each controlled substance. An illustrative list of mixtures with their compositions is given in section

11 of these data reporting instructions and guidelines. If the mixture being reported is not included in section 11, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported. For further information about the composition and commercial trade names of chemical products containing controlled substances, visit the "WhatGas?" page on the OzonAction website.[12] This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent illegal trade.

6.5 Reporting of countries of destination is not a requirement under Article 7. In paragraph 4 of decision VII/9, it is stated that parties should report on the destination of Annex A and Annex B substances (new, recovered or reclaimed) that are exported. Paragraph 4 of decision XVII/16 requested a revision of the reporting formats to cover the export of all controlled substances contained in the annexes of the Protocol and urged parties to implement the revised reporting format expeditiously. Please fill in column 2 on the destination of exports, ensuring that if a particular controlled substance is exported to more than one country, the quantity exported to each country is indicated separately. Please see the example below.

1. Fill in this form only if your country exported or reexported CFCs, halons, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane, methyl bromide or HFCs

2. Please read instruction II carefully before filling in this form.

DATA FORM 2 **A7_Dataform_2024**

DATA ON EXPORTS*

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Annex A, B, C, E and F substances

Party: _____ Period: January – December 20____

*(1) Substance **or** **Mixture***	*(2) Country of destination of exports***	*Total quantity exported for all uses*		*(5) Quantity of new substance exported for feedstock****	*Quantity of new substances exported for exempted essential, critical, high-ambient-temperature or other uses*****	
		(3) New	*(4) Recovered and reclaimed*		*(6) Quantity*	*(7) Decision / type of use***** or remarks*
HCFC-22	**Destination AAA**	**50**				
HCFC-22	**Destination BBB**	**75**				
HFC-134a	**Destination AAA**	**80**				
HFC-134a	**Destination CCC**	**60**				
HFC-134a	**Destination DDD**	**30**				
Methyl bromide (CH_3Br)						
					Quantity of new methyl bromide exported to be used for quarantine and pre-shipment applications	

Comments:

[1] Tonne = metric ton.

Note: If a non-standard mixture not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "remarks" column or in the "comments" box above.

* Includes re-exports. Ref. decisions IV/14 and XVII/16, paragraph 4.

** Reporting of countries of destination is not a requirement under Article 7. In paragraph 4 of decision VII/9, it was decided that parties should report on the destination of Annex A and Annex B substances (new, recovered or reclaimed) that are exported. Paragraph 4 of decision XVII/16 requested a revision of the reporting formats to cover the export of all controlled substances contained in the annexes of the Protocol, and urged the Parties to implement the revised reporting format expeditiously.

*** Do not deduct from total production in column 3 of data form 3 (data on production).

**** Against each substance exported for exempted essential, critical, high-ambient-temperature or other uses, please specify the meeting of the parties decision that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box above.

6.6 If your country is exporting new controlled substances, please provide the quantity in tonnes for the chemical(s) you exported in column 3. If you exported any recovered or reclaimed substances, please enter the data in column 4.

[12] https://www.unep.org/ozonaction/resources/mobile-app-whatgas/whatgas.

6.7 Under the Montreal Protocol, controlled substances used as feedstock for the production of other chemicals are not included in the calculation of a party's consumption, as such controlled substances are completely transformed in the manufacturing process of new chemicals. When reporting the total quantities of new substances exported in column 3, **do not deduct** the quantities exported to be used as feedstock reported in column 5. Similarly, **do not deduct** the quantities exported for exempted essential, critical, high-ambient-temperature or other uses, reported in column 6. In column 7, please indicate, for each type of controlled substance exported for exempted essential, critical, high-ambient-temperature or other uses, the decision of the meeting of the parties that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box at the end of the form.

6.8 When calculating a party's consumption of methyl bromide, quantities used for quarantine and pre-shipment applications are exempted. In data form 2, please enter quantities of methyl bromide exported for quarantine and pre-shipment applications separately, and **do not deduct them** from the quantity exported. The Secretariat will make the necessary deductions.

Section 7: Instruction III on data on production of controlled substances (data form 3)

7.1 Please use data form 3 to report data on production of substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs). Generation of HFC-23 that is captured, whether for destruction, feedstock or any other use, shall be reported in data form 3.

7.2 All the substances in Annex A, Annex B Groups II and III, and Annex F are listed in column 2 of data form 3. For Annex B Group I (other fully halogenated CFCs) and Annex C Group I (HCFCs), only substances that have been reported by parties in the past are listed. HBFCs and BCM have already been phased out by all parties and hence one row has been provided as a formality only. If you are producing controlled substances other than those listed, please use the blank space to report data on those substances, or use additional pages, if necessary.

7.3 In column 3 of data form 3, please give the **total** production (or, in the case of HFC-23, including the unintentional generation) of your country **without** making any deductions for feedstock, destruction, export for feedstock uses, or any other use. **Do not deduct** from your total production (or, in the case of HFC-23, including the unintentional generation) the quantity of production used for feedstock **within** your country reported in column 4, or the production for exempted essential, critical, high-ambient-temperature or other uses within your country reported in column 5. Similarly, **do not deduct** from your total production the quantity of production for supply to Article 5 parties reported in column 7. Please report exports of controlled substances to be used for feedstock by the importing country in column 5 of data form 2 (data on exports), not in data form 3 (this form). The Secretariat will make the necessary deductions. With regard to production for exempted essential, critical, high-ambient-temperature or other uses, please indicate in column 6, for each type of controlled substance produced for exempted essential, critical, high-ambient-temperature or other uses, the decision of the meeting of the parties that approved the use. Should the column space be insufficient, further information can be provided in the "comments" box at the end of the form.

7.4 When calculating a party's consumption, the Montreal Protocol does not include controlled substances used as feedstock for the production of other chemicals, as such controlled substances are completely transformed in the manufacturing process of the new chemical. If your country produced or generated controlled substances for feedstock use within the reporting period, please provide data on the quantity of each controlled substance produced for feedstock purposes in column 4. The Secretariat will make the necessary deductions. Generated HFC-23 that is captured, whether for destruction, feedstock or any other use, shall be reported on data form 3. Amounts converted to other substances shall be reported under the column for feedstock uses. Amounts of HFC-23 captured for destruction or feedstock use will not be counted as production as per Article 1.

7.5 Producers are allowed to produce additional amounts to meet the basic domestic needs of Article 5 parties. If your country produced controlled substances for this purpose, please enter the amount so produced in column 7 of data form 3.

7.6 When calculating a party's consumption of methyl bromide, quantities produced for quarantine and pre-shipment applications are exempted. Please enter the total quantities of methyl bromide produced for quarantine and pre-shipment applications separately at the bottom of data form 3

and **do not deduct them** from the total quantity produced. The Secretariat will make the necessary deductions.

Section 8: Instruction IV on data on destruction of controlled substances (data form 4)

8.1 Very few countries have the capacity to destroy controlled substances using approved destruction technologies. If your country has destroyed any of the substances listed in Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM), Annex E (methyl bromide) and Annex F (HFCs) in the reporting period, please use data form 4.

8.2 The first column ("Substance") has been left blank because each party may destroy different substances ***or mixtures***. Please list only the names of those substances ***or mixtures*** destroyed in the reporting year.

8.3 Under the Montreal Protocol, the amount of substances destroyed is not included in the calculation of a party's production and consumption if destruction occurred through the use of an approved technology (listed in decision XXIII/12 and any subsequent relevant decisions). If you have destroyed any substance in the reporting year, **do not deduct** the quantity destroyed reported in column 2 of data form 4 from the total production reported in column 3 of data form 3. The Secretariat will make the necessary deductions.

Section 9: Instruction V on data on imports from and exports to non-parties (data form 5)

9.1 Please use data form 5 to report data on imports from and exports to non-parties of substances of Annex A (CFCs and halons), Annex B (other fully halogenated CFCs, methyl chloroform and carbon tetrachloride), Annex C (HCFCs, HBFCs and BCM) and Annex E (methyl bromide).

9.2 The first column ("Substance") has been left blank because each party may import different substances or mixtures from and/or export different substances or mixtures to non-parties. Please fill in only the names of those substances that were imported from and/or exported to non-parties.

9.3 For purposes of these data forms, "non-party" means:

- With respect to Annex A substances, all countries that have not ratified the 1987 Montreal Protocol;
- With respect to Annex B substances, all countries that have not ratified the London Amendment;
- With respect to Annex C substances, all countries that have not ratified the Copenhagen Amendment;
- With respect to Annex E substances, all countries that have not ratified the Copenhagen Amendment;

except where the parties have otherwise specified by means of a decision.

9.4 Exports of HFCs should not be reported under data form 5 but should be reported under data form 2. Any export of HFCs that is nonetheless reported on data form 5 shall not be treated as export to non-parties for the purpose of calculating the consumption levels as specified in paragraph 1 (c) of Article 3 of the Montreal Protocol.

9.5 Reporting of information on "exporting parties for quantities reported as imports" and "countries of destination of exports" is not a requirement under Article 7 of the Protocol, and the information is to be provided on a voluntary basis. Please fill in column 2 on the exporting countries for imports or destination of exports, ensuring that if a particular controlled substance is exported to or imported from more than one country, the quantity exported to or imported from each country is indicated separately.

9.6 The status of ratification of the Montreal Protocol and its amendments can be found in a document published by the Secretariat and updated twice a year. That information is also available on the website of the Ozone Secretariat, at: http://ozone.unep.org/.

Section 10: Instruction VI on data on emissions of Annex F, Group II substance – HFC-23 (data form 6)

10.1 Very few countries will have manufacturing facilities for Annex C Group I or Annex F substances that generate HFC-23. If your country has such facilities that were operational in the reporting period, please use data form 6 to report emissions of HFC-23 from each facility. If there were no emissions from a manufacturing facility, please include the facility in the data form and enter a zero in the emissions column.

10.2 For the purposes of data form 6, parties use methodologies to determine amounts for generation and emissions.

10.3 The information in columns 2 to 6 and 8 of data form 6 is excluded from the reporting requirements under Article 7 the Protocol and is provided on a voluntary basis. The amount of generated HFC-23 refers to the total amount whether captured or not. Parties may use columns 3 and 8 to show the amounts stored at the beginning and end of the year.

Section 11: Illustrative list of mixtures containing controlled substances[13]

11.1 Zeotropic mixtures

No.	*Refrigerant*	*Composition*											
		Component 1		*Component 2*		*Component 3*		*Component 4*		*Component 5*		*Component 6*	
1.	R-401A	HCFC-124	34%	HCFC-22	53%	HFC-152a	13%						
2.	R-401B	HCFC-124	28%	HCFC-22	61%	HFC-152a	11%						
3.	R-401C	HCFC-124	52%	HCFC-22	33%	HFC-152a	15%						
4.	R-402A	HC-290	2%	HCFC-22	38%	HFC-125	60%						
5.	R-402B	HC-290	2%	HCFC-22	60%	HFC-125	38%						
6.	R-403A	HC-290	5%	HCFC-22	75%	PFC-218	20%						
7.	R-403B	HC-290	5%	HCFC-22	56%	PFC-218	39%						
8.	R-404A	HFC-125	44%	HFC-134a	4%	HFC-143a	52%						
9.	R-405A	HCFC-142b	6%	HCFC-22	45%	HFC-152a	7%	PFC-C318	43%				
10.	R-406A	HC-600a	4%	HCFC-142b	41%	HCFC-22	55%						
11.	R-407A	HFC-125	40%	HFC-134a	40%	HFC-32	20%						
12.	R-407B	HFC-125	70%	HFC-134a	20%	HFC-32	10%						
13.	R-407C	HFC-125	25%	HFC-134a	52%	HFC-32	23%						
14.	R-407D	HFC-125	15%	HFC-134a	70%	HFC-32	15%						
15.	R-407E	HFC-125	15%	HFC-134a	60%	HFC-32	25%						
16.	R-407F	HFC-125	30%	HFC-134a	40%	HFC-32	30%						
17.	R-407G	HFC-125	2.5%	HFC-134a	95%	HFC-32	2.5%						
18.	R-408A	HCFC-22	47%	HFC-125	7%	HFC-143a	46%						
19.	R-409A	HCFC-124	25%	HCFC-142b	15%	HCFC-22	60%						
20.	R-409B	HCFC-124	25%	HCFC-142b	10%	HCFC-22	65%						
21.	R-410A	HFC-125	50%	HFC-32	50%								
22.	R-410B	HFC-125	55%	HFC-32	45%								
23.	R-411A	HO-1270	1.5%	HCFC-22	87.5%	HFC-152a	11%						
24.	R-411B	HO-1270	3%	HCFC-22	94%	HFC-152a	3%						
25.	R-412A	HCFC-142b	25%	HCFC-22	70%	PFC-218	5%						
26.	R-413A	HC-600a	3%	HFC-134a	88%	PFC-218	9%						
27.	R-414A	HC-600a	4%	HCFC-124	28.5%	HCFC-142b	16.5%	HCFC-22	51%				
28.	R-414B	HC-600a	1.5%	HCFC-124	39%	HCFC-142b	9.5%	HCFC-22	50%				
29.	R-415A	HCFC-22	82%	HFC-152a	18%								
30.	R-415B	HCFC-22	25%	HFC-152a	75%								
31.	R-416A	HC-600	1.5%	HCFC-124	39.5%	HFC-134a	59%						

[13] For more information about trade names for mixtures and pure substances, visit the "WhatGas?" page on the UNEP Division of Technology, Industry and Economics (DTIE) OzonAction website, at https://www.unep.org/ozonaction/resources/mobile-app-whatgas/whatgas. This worldwide database service is designed to help customs officials and national ozone units control imports and exports of controlled substances and prevent their illegal trade.

No.	*Refrigerant*	*Composition*											
		Component 1		*Component 2*		*Component 3*		*Component 4*		*Component 5*		*Component 6*	
32.	R-417A	HC-600	3.4%	HFC-125	46.6%	HFC-134a	50%						
33.	R-417B	HC-600	2.7%	HFC-125	79%	HFC-134a	18.3%						
34.	R-417C	HC-600	1.7%	HFC-125	19.5%	HFC-134a	78.8%						
35.	R-418A	HC-290	1.5%	HCFC-22	96%	HFC-152a	2.5%						
36.	R-419A	HCE-170	4%	HFC-125	77%	HFC-134a	19%						
37.	R-419B	HCE-170	3.5%	HFC-125	48.5%	HFC-134a	48%						
38.	R-420A	HCFC-142b	12%	HFC-134a	88%								
39.	R-421A	HFC-125	58%	HFC-134a	42%								
40.	R-421B	HFC-125	85%	HFC-134a	15%								
41.	R-422A	HC-600a	3.4%	HFC-125	85.1%	HFC-134a	11.5%						
42.	R-422B	HC-600a	3%	HFC-125	55%	HFC-134a	42%						
43.	R-422C	HC-600a	3%	HFC-125	82%	HFC-134a	15%						
44.	R-422D	HC-600a	3.4%	HFC-125	65.1%	HFC-134a	31.5%						
45.	R-422E	HC-600a	2.7%	HFC-125	58%	HFC-134a	39.3%						
46.	R-423A	HFC-134a	52.5%	HFC-227ea	47.5%								
47.	R-424A	HC-600	1%	HC-600a	0.9%	HC-601a	0.6%	HFC-125	50.5%	HFC-134a	47%		
48.	R-425A	HFC-134a	69.5%	HFC-227ea	12%	HFC-32	18.5%						
49.	R-426A	HC-600	1.3%	HC-601a	0.6%	HFC-125	5.1%	HFC-134a	93%				
50.	R-427A	HFC-125	25%	HFC-134a	50%	HFC-143a	10%	HFC-32	15%				
51.	R-428A	HC-290	0.6%	HC-600a	1.9%	HFC-125	77.5%	HFC-143a	20%				
52.	R-429A	HC-600a	30%	HCE-170	60%	HFC-152a	10%						
53.	R-430A	HC-600a	24%	HFC-152a	76%								
54.	R-431A	HC-290	71%	HFC-152a	29%								
55.	R-434A	HC-600a	2.8%	HFC-125	63.2%	HFC-134a	16%	HFC-143a	18%				
56.	R-435A	HCE-170	80%	HFC-152a	20%								
57.	R-437A	HC-600	1.4%	HC-601	0.6%	HFC-125	19.5%	HFC-134a	78.5%				
58.	R-438A	HC-600	1.7%	HC-601a	0.6%	HFC-125	45%	HFC-134a	44.2%	HFC-32	8.5%		
59.	R-439A	HC-600a	3%	HFC-125	47%	HFC-32	50%						
60.	R-440A	HC-290	0.6%	HFC-134a	1.6%	HFC-152a	97.8%						
61.	R-442A	HFC-125	31%	HFC-134a	30%	HFC-152a	3%	HFC-227ea	5%	HFC-32	31%		
62.	R-444A	HFC-152a	5%	HFC-32	12%	HFO-1234ze (E)	83%						
63.	R-444B	HFC-152a	10%	HFC-32	41.5%	HFO-1234ze (E)	48.5%						
64.	R-445A	HFC-134a	9%	R-744	6%	HFO-1234ze (E)	85%						
65.	R-446A	HC-600	3%	HFC-32	68%	HFO-1234ze (E)	29%						
66.	R-447A	HFC-125	3.5%	HFC-32	68%	HFO-1234ze (E)	28.5%						
67.	R-447B	HFC-125	8%	HFC-32	68%	HFO-1234ze (E)	24%						
68.	R-448A	HFC-125	26%	HFC-134a	21%	HFO-1234ze (E)	7%	HFO-1234yf	20%	HFC-32	26%		
69.	R-449A	HFC-125	24.7%	HFC-134a	25.7%	HFC-32	24.3%	HFO-1234yf	25.3%				
70.	R-449B	HFC-125	24.3%	HFC-134a	27.3%	HFC-32	25.2%	HFO-1234yf	23.2%				
71.	R-449C	HFC-125	20%	HFC-134a	29%	HFC-32	20%	HFO-1234yf	31%				
72.	R-450A	HFC-134a	42%	HFO-1234ze (E)	58%								
73.	R-451A	HFC-134a	10.2%	HFO-1234yf	89.8%								
74.	R-451B	HFC-134a	11.2%	HFO-1234yf	88.8%								

No.	*Refrigerant*	*Composition*											
		Component 1		*Component 2*		*Component 3*		*Component 4*		*Component 5*		*Component 6*	
75.	R-452A	HFC-125	59%	HFC-32	11%	HFO-1234yf	30%						
76.	R-452B	HFC-125	7%	HFC-32	67%	HFO-1234yf	26%						
77.	R-452C	HFC-125	61%	HFC-32	12.5%	HFO-1234yf	26.5%						
78.	R-453A	HC-600	0.6%	HC-601a	0.6%	HFC-125	20%	HFC-134a	53.8%	HFC-227ea	5%	HFC-32	20%
79.	R-454A	HFC-32	35%	HFO-1234yf	65%								
80.	R-454B	HFC-32	68.9%	HFO-1234yf	31.1%								
81.	R-454C	HFC-32	21.5%	HFO-1234yf	78.5%								
82.	R-455A	HFC-32	21.5%	HFO-1234yf	75.5%	R-744	3%						
83.	R-456A	HFC-134a	45%	HFC-32	6%	HFO-1234ze (E)	49%						
84.	R-457A	HFC-152a	12%	HFC-32	18%	HFO-1234yf	70%						
85.	R-458A	HFC-125	4%	HFC-134a	61.4%	HFC-227ea	13.5%	HFC-236fa	0.6%	HFC-32	20.5%		
86.	R-459A	HFC-32	68%	HFO-1234yf	26%	HFO-1234ze (E)	6%						
87.	R-459B	HFC-32	21%	HFO-1234yf	69%	HFO-1234ze (E)	10%						
88.	R-460A	HFC-125	52%	HFC-134a	14%	HFO-1234ze (E)	22%	HFC-32	12%				
89.	R-460B	HFC-125	25%	HFC-134a	20%	HFO-1234ze (E)	27%	HFC-32	28%				

11.2 Azeotropic mixtures

No.	*Refrigerant number (trade name) of mixture*	*Composition*			
		Component 1		*Component 2*	
1.	R-500	CFC-12	73.8%	HFC-152a	26.2%
2.	R-501	CFC-12	25%	HCFC-22	75%
3.	R-502	CFC-115	51.2%	HCFC-22	48.8%
4.	R-503	CFC-13	59.9%	HFC-23	40.1%
5.	R-504	CFC-115	51.8%	HFC-32	48.2%
6.	R-505	CFC-12	78%	HCFC-31	22%
7.	R-506	CFC-114	45%	HCFC-31	55%
8.	R-507A (AZ-50)	HFC-125	50%	HFC-143a	50%
9.	R-508A	HFC-23	39%	PFC-116	61%
10.	R-508B	HFC-23	46%	PFC-116	54%
11.	R-509 (TP5R2)	HCFC-22	46%	PFC-218	54%
12.	R-509A	HCFC-22	44%	PFC-218	56%
13.	R-512A	HFC-134a	5%	HFC-152a	95%
14.	R-513A (XP10/DR-11)	HFC-134a	44%	HFO-1234yf	56%
15.	R-513B	HFC-134a	41.5%	HFO-1234yf	58.5%
16.	R-515A	HFC-227ea	12%	HFO-1234ze (E)	88%

11.3 Other mixtures

No.	*Trade name of mixture*	*Composition*							
		Component 1		*Component 2*		*Component 3*		*Component 4*	
1.	FX 20	HFC-125	45%	HCFC-22	55%				
2.	FX 55	HCF-C22	60%	HCFC-142b	40%				
3.	D 136	HCFC-22	50%	HCFC-124	47%	HC-600a	3%		
4.	Daikin Blend	HFC-23	2%	HFC-32	28%	HCFC-124	70%		
5.	FRIGC	HCFC-124	39%	HCFC-134a	59%	HC-600a	2%		
6.	Free Zone	HCFC-142b	19%	HFC-134a	79%	Lubricant	2%		
7.	GHG-HP	HCFC-22	65%	HCFC-142b	31%	HC-600a	4%		

No.	*Trade name of mixture*	*Composition*							
		Component 1		*Component 2*		*Component 3*		*Component 4*	
8.	GHG-X5	HCFC-22	41%	HCFC-142b	15%	HFC-227ea	40%	HC-600a	4%
9.	NARM-502	HCFC-22	90%	HFC-152a	5%	HFC-23	5%		
10.	NASF-S-III[14]	HCFC-22	82%	HCFC-123	4.75%	HCFC-124	9.5%	HC-600a	3.75%

11.4 Methyl bromide mixtures

No.	*Trade name of mixture*	*Composition*			
		Component 1		*Component 2*	
1.	Methyl bromide with chloropicrin	Methyl bromide	67%	Chloropicrin	33%
2.	Methyl bromide with chloropicrin	Methyl bromide	98%	Chloropicrin	2%

[14] A halon alternative.

Data form 7 on consumption (imports) under the exemption for high-ambient-temperature parties

1. Fill in this form only if your country is listed in Appendix II to decision XXVIII/2, has formally notified the Secretariat of its intention to use the high-ambient-temperature exemption, and imported HFCs for its own use in the subsectors contained in Appendix I to decision XXVIII/2.

DATA FORM 7 **HAT_Dataform_2024**

DATA ON IMPORTS OF ANNEX F SUBSTANCES FOR EXEMPTED SUBSECTORS

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Party: _____ Period: January - December 20____

(1) *Annex/group*	*(2)* *Substance*	*Quantity of new substances imported for approved subsectors to which the high-ambient-temperature exemption applies (columns to be added as required for other subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)**				
		(3) *New imports for use in multi-split air conditioners*	*(4)* *New imports for use in split ducted air conditioners*	*(5)* *New imports for use in ducted commercial packaged (self-contained) air conditioners*	*(6)* *New imports for use in subsector***	*(7)* *New imports for use in subsector***
F-Group I	HFC-32 (CH_2F_2)					
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					

(1) *Annex/group*	*(2)* *Substance*	*Quantity of new substances imported for approved subsectors to which the high-ambient-temperature exemption applies (columns to be added as required for other subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)**				
		(3) *New imports for use in multi-split air conditioners*	*(4)* *New imports for use in split ducted air conditioners*	*(5)* *New imports for use in ducted commercial packaged (self-contained) air conditioners*	*(6)* *New imports for use in subsector***	*(7)* *New imports for use in subsector***
F-Group II	HFC-23 (CHF_3)					
Mixtures containing controlled substance(s) – applicable to all substances, not just HFCs (add additional rows or pages as required for mixtures not listed below)						
R-404A (HFC-125 = 44%, HFC-134a = 4%, HFC-143a = 52%)						
R-407A (HFC-32 = 20%, HFC-125 = 40%, HFC-143a = 40%)						
R-407C (HFC-32 = 23%, HFC-125 = 25%, HFC-143a = 52%)						
R-410A (HFC-32 = 50%, HFC-125 = 50%)						
R-507A (HFC-125 = 50%, HFC-143a = 50%)						
R-508B (HFC-23 = 46%, PFC-116 = 54%)						
Comments:						

[1] Tonne = Metric ton.

Note: If a non-standard mixture not listed in section 11 of the data reporting instructions and guidelines is to be reported, please indicate the percentage by weight of each constituent controlled substance of the mixture being reported in the "comments" box above.

* Only bulk gases for servicing of exempted equipment should be reported here, not gases imported inside pre-charged equipment.

** For each substance imported for use in subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please specify the approved subsector. Should the column space be insufficient, further information can be provided in the "comments" box above.

Data form 8 on production under the exemption for high-ambient-temperature parties

1. Fill in this form only if your country is listed in appendix II to decision XXVIII/2, has formally notified the Secretariat of its intention to use the high-ambient-temperature exemption, and produced HFCs for its own use in the subsectors contained in appendix I to decision XXVIII/2.

DATA FORM 8

HAT_Dataform_2024

DATA ON PRODUCTION OF ANNEX F SUBSTANCES FOR EXEMPTED SUBSECTORS

in tonnes[1] (not ODP or CO_2-equivalent tonnes)

Party: _____

Period: January - December 20____

(1) *Annex/group*	*(2)* *Substance*	Quantity of new substances *produced for approved subsectors to which the high-ambient-temperature exemption applies (production should be for use within the producing country) (columns to be added as required for other sub-sectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2)** *(3)* *New production for use in multi-split air conditioners*	*(4)* *New production for use in split ducted air conditioners*	*(5)* *New production for use in ducted commercial packaged (self-contained) air conditioners*	*(6)* *New production for use in subsector**	*(7)* *New production for use in subsector**
F-Group I	HFC-32 (CH_2F_2)					
	HFC-41 (CH_3F)					
	HFC-125 (CHF_2CF_3)					
	HFC-134 (CHF_2CHF_2)					
	HFC-134a (CH_2FCF_3)					
	HFC-143 (CH_2FCHF_2)					
	HFC-143a (CH_3CF_3)					
	HFC-152 (CH_2FCH_2F)					
	HFC-152a (CH_3CHF_2)					
	HFC-227ea (CF_3CHFCF_3)					
	HFC-236cb ($CH_2FCF_2CF_3$)					
	HFC-236ea (CHF_2CHFCF_3)					
	HFC-236fa ($CF_3CH_2CF_3$)					
	HFC-245ca ($CH_2FCF_2CHF_2$)					
	HFC-245fa ($CHF_2CH_2CF_3$)					
	HFC-365mfc ($CF_3CH_2CF_2CH_3$)					
	HFC-43-10mee ($CF_3CHFCHFCF_2CF_3$)					
F-Group II	HFC-23 (CHF_3)					

Comments:

[1] Tonne = Metric ton.

* For each substance produced for use in subsectors that may be approved after the assessments under paragraphs 32 and 33 of decision XXVIII/2, please specify the approved subsector. Should the column space be insufficient, further information can be provided in the "comments" box above.

Annex III

Approved budget for the Trust Fund for Montreal Protocol on Substances that Deplete the Ozone Layer for 2025 and noted budget for 2026 and parties' contributions to the Trust Fund for the Montreal Protocol

Table A
Approved 2025 and noted 2026 budgets
(United States dollars)

Budget line	*Cost category*	*2025*	*2026 Zero Nominal Growth*	*2026 Recommended*
1100	**Employee salaries, allowances and benefits**	**1 795 000**	**1 830 000**	**1 830 000**
1200	**Consultants**	**80 000**	**-**	**85 000**
1300	**Conference Services Costs**			
1305	Open-ended Working Group meetings	730 000	895 000	895 000
1310	Meetings of the Parties	655 000	670 000	670 000
1315	Communications costs for Article 5 Assessment Panel members and organizational costs of panel meetings	55 000	55 000	55 000
1320	Bureau meetings	25 000	25 000	25 000
1325	Implementation Committee meetings	165 000	165 000	165 000
1350	Hospitality	-	29 500	30 000
	Sub-total: Conference Services Costs	**1 630 000**	**1 839 500**	**1 840 000**
3300	**Travel of Article 5 parties and Assessment Panel experts**			
3310	Assessment panel meetings	350 000	380 000	380 000
3320	Meetings of the Parties	525 000	550 000	550 000
3330	Open-ended Working Group meetings	475 000	500 000	500 000
3340	Bureau meetings	15 000	15 000	15 000
3350	Implementation Committee meetings	65 000	65 000	65 000
	Sub-total: Travel of Article 5 parties and experts	**1 430 000**	**1 510 000**	**1 510 000**
1600	**Staff travel on official business**			
1601	Secretariat staff	195 000	-	205 000
1602	Conference services staff	-	-	15 000
	Sub-total: Staff travel on official business	**195 000**	**-**	**220 000**
4100–5300	**Operating costs**			
4100	Expendable equipment	5 000	-	7 000
4200	Non-expendable equipment	8 000	-	12 000
4300	Rental of premises	34 000	-	34 000
5100	Operation & maintenance of equipment	22 000	-	22 000
5200	Reporting costs	75 000	-	75 000
5300	Miscellaneous costs	10 000	-	15 000
5310	Registration system enhancement	2 500	-	-
5320	Software and website maintenance	10 000	-	-
5330	Website hosting	5 000	-	-
	Sub-total: Operating costs	**171 500**	**-**	**165 000**
5201	**Public awareness and communication**	**50 000**	**-**	**82 500**

Budget line	*Cost category*	*2025*	*2026 Zero Nominal Growth*	*2026 Recommended*
	Total direct costs	**5 351 500**	**5 179 500**	**5 732 500**
	Programme support costs	695 695	673 335	745 225
	Total direct costs including programme support costs	**6 047 195**	**5 852 835**	**6 477 725**
	Additional activities funded from the cash balance			
5202	Communication campaign	50 000	100 000	100 000
5203	Digital tools: enhancements	-	30 000	30 000
3311	Informal meeting of the parties	80 000	-	-
2201	Atmospheric monitoring	400 000	-	-
	Total direct costs - Additional activities funded from the cash balance	**530 000**	**130 000**	**130 000**
	Programme support costs	68 900	16 900	16 900
	Total additional activities including programme support costs	**598 900**	**146 900**	**146 900**
	Overall direct costs	**5 881 500**	**5 309 500**	**5 862 500**
	Overall programme support costs	**764 595**	**690 325**	**762 125**
	Grand total	**6 646 095**	**5 999 735**	**6 624 625**

Appendix to table A

Explanatory notes for the 2025 budget of the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer

Cost category	*Budget line*	*Purpose of the amount allocated to the budget line*
Employee salaries, allowances and benefits	1100	The estimates under this category have been increased by 2 per cent over the preceding year to allow for inflation and within grade increment for staff salary. The costs of a United Nations Volunteer to support the work of the Secretariat are included in this category. The category also includes other costs related to staff (e.g., medical services, stress counselling, host country services and security).
Consultants	1200	The amount allocated is for consultants with expertise that is not available in the Ozone Secretariat but is required to respond to decisions of the parties.
Conference services costs	1300	This category includes venue rental costs, editing and translation of meeting documents, interpretation during the meeting and report-writing. Conference servicing staff time and travel costs are also included in this category.
	1305	The cost estimates for the forty-seventh meeting of the Open-ended Working Group are based on the costs of the meeting held in Bangkok in 2023 and adjusted for inflation.
	1310	The cost estimates for the Thirty-Seventh Meeting of the Parties are based on costs of the Thirty-Fifth Meeting of the Parties held in Nairobi in 2023 and adjusted for inflation.
	1315	Communications and meeting costs for the assessment panels, associated technical options committees and subsidiary bodies. The budget is used for the organization of meetings of the panel members and allowance for the panel co-chairs from parties operating under paragraph 1 of Article 5 to cover communication costs related to the work of assessment panels.
	1320	Budget for the meeting of the Bureau of the Thirty-Sixth Meeting of the Parties.
	1325	The proposed budget for Implementation Committee meetings in 2025 includes the cost of two meetings, one held back to back with the forty-seventh meeting of the Open-ended Working Group and the other held back to back with the Thirty-Seventh Meeting of the Parties. The budget amount has been increased to allow increase in costs of conducting the meetings.

Cost category	*Budget line*	*Purpose of the amount allocated to the budget line*
Travel of Article 5 parties and assessment panel experts	3300	The participation of representatives of Article 5 parties and countries with economies in transition in various Montreal Protocol meetings is budgeted at $4,000 per representative per meeting calculated on the basis of economy class fare using the most direct and economical route plus United Nations daily subsistence allowances and terminal expenses.
	3310	Budget for travel of assessment panel members to participate in the meetings of the ozone treaties and in the meetings of the panel members.
	3320	Budget for travel of participants to the Thirty-Seventh Meeting of the Parties.
	3330	Budget for participation at the forty-seventh meeting of the Open-ended Working Group.
	3340	Travel of the members to participate in the meeting of the Bureau of the Thirty-Sixth Meeting of the Parties and in the Thirty-Seventh Meeting of the Parties.
	3350	Travel of Implementation Committee members to participate in its seventy-fourth and seventy-fifth meetings, to be held back to back with the forty-seventh meeting of the Open-ended Working Group and the Thirty-Seventh Meeting of the Parties, respectively. The funded members of the Committee will also attend the forty-seventh meeting of the Open-ended Working Group and the Thirty-Seventh Meeting of the Parties which commence the week after the Committee meetings.
Staff travel on official business	1600	The budget includes travel by Ozone Secretariat staff to organize and/or participate in meetings of the Montreal Protocol and other relevant meetings, such as the meetings of the ozone officers under the regional networks of the OzonAction programme, to provide substantive support to meetings of importance to the ongoing work of the Secretariat to implement the decisions and requests of the parties.
	1601	The travel costs of Secretariat staff for above-mentioned official purpose.
Operating costs	4100–5300	The budget allocated to this category is used along with the amount allocated for similar budget lines for operations under the Vienna Convention Trust Fund.
	4100	The budget includes the cost of software licences, stationery, office supplies and consumables.
	4200	This budget line provides for the cost of computers, peripherals and furniture.
	4300	Covers the cost of office rental and utilities for the Secretariat in Nairobi.
	5100	For the operation and maintenance of equipment, the budget includes the service-level agreements for printers and photocopying machines, information technology support provided by the United Nations Office at Nairobi, and insurance of equipment.
	5200	The reporting costs include reporting and coverage at the forty-seventh meeting of the Open-ended Working Group and the Thirty-Seventh Meeting of the Parties, assessment panel reports, ad hoc translation, editing of documents not related to meetings, and publications.
	5300	The Miscellaneous costs budget line replaces the Sundry line item and includes telecommunication costs, freight costs and staff training costs.
	5310*	Budget for registration system enhancement.
	5320*	Budget for software & website maintenance.
	5330*	Budget for website hosting.
Public awareness and communication	5201	Includes awareness-raising campaigns, visual materials, branding of meetings and the World Ozone Day (WOD) celebrations. The budget for WOD celebrations for Article 5 parties has been increased from $15,000 to $20,000.
Additional activities funded from the cash balance		
	5202	The budget will be used for awareness-raising campaigns to complement the budget requested under the category “Public awareness and communication” noted above.
	3311	Budget for an informal meeting of the parties requested under paragraph 4 of decision XXXVI/9.
	2201	Budget for atmospheric monitoring activities.

*The three budget lines have been moved from the public awareness and communications category to the operating costs category.

Table B
Parties' contributions to the Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer
(United States dollars)

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties for the zero-nominal-growth budget*	*2026 contributions by parties for the recommended budget*
Afghanistan	-	-	-	-
Albania	-	-	-	-
Algeria	0.109	5 264	6 369	7 049
Andorra	-	-	-	-
Angola	-	-	-	-
Antigua and Barbuda	-	-	-	-
Argentina	0.718	34 724	42 010	46 496
Armenia	-	-	-	-
Australia	2.107	101 952	123 344	136 512
Austria	0.678	32 793	39 673	43 909
Azerbaijan	-	-	-	-
Bahamas	-	-	-	-
Bahrain	-	-	-	-
Bangladesh	-	-	-	-
Barbados	-	-	-	-
Belarus	-	-	-	-
Belgium	0.827	39 989	48 379	53 545
Belize	-	-	-	-
Benin	-	-	-	-
Bhutan	-	-	-	-
Bolivia (Plurinational State of)	-	-	-	-
Bosnia and Herzegovina	-	-	-	-
Botswana	-	-	-	-
Brazil	2.010	97 219	117 618	130 175
Brunei Darussalam	-	-	-	-
Bulgaria	-	-	-	-
Burkina Faso	-	-	-	-
Burundi	-	-	-	-
Cabo Verde	-	-	-	-
Cambodia	-	-	-	-
Cameroon	-	-	-	-
Canada	2.624	126 920	153 551	169 946
Central African Republic	-	-	-	-
Chad	-	-	-	-
Chile	0.419	20 284	24 540	27 160
China	15.228	736 699	891 276	986 435
Colombia	0.246	11 881	14 374	15 908
Comoros	-	-	-	-
Congo	-	-	-	-
Cook Islands	-	-	-	-

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties for the zero-nominal-growth budget*	*2026 contributions by parties for the recommended budget*
Costa Rica	-	-	-	-
Côte d'Ivoire	-	-	-	-
Croatia	-	-	-	-
Cuba	-	-	-	-
Cyprus	-	-	-	-
Czechia	0.339	16 420	19 866	21 987
Democratic People's Republic of Korea	-	-	-	-
Democratic Republic of Congo	-	-	-	-
Denmark	0.552	26 707	32 311	35 761
Djibouti	-	-	-	-
Dominica	-	-	-	-
Dominican Republic	-	-	-	-
Ecuador	-	-	-	-
Egypt	0.139	6 713	8 122	8 989
El Salvador	-	-	-	-
Equatorial Guinea	-	-	-	-
Eritrea	-	-	-	-
Estonia	-	-	-	-
Eswatini	-	-	-	-
Ethiopia	-	-	-	-
European Union	2.496	120 739	146 073	161 668
Fiji	-	-	-	-
Finland	0.416	20 139	24 365	26 966
France	4.311	208 540	252 297	279 233
Gabon	-	-	-	-
Gambia	-	-	-	-
Georgia	-	-	-	-
Germany	6.101	295 134	357 060	395 182
Ghana	-	-	-	-
Greece	0.324	15 696	18 989	21 017
Grenada	-	-	-	-
Guatemala	-	-	-	-
Guinea	-	-	-	-
Guinea-Bissau	-	-	-	-
Guyana	-	-	-	-
Haiti	-	-	-	-
Holy See	-	-	-	-
Honduras	-	-	-	-
Hungary	0.228	11 011	13 322	14 744
Iceland	-	-	-	-
India	1.042	50 420	61 000	67 513
Indonesia	0.548	26 514	32 078	35 502
Iran (Islamic Republic of)	0.370	17 918	21 677	23 992
Iraq	0.128	6 182	7 479	8 277
Ireland	0.438	21 202	25 650	28 389
Israel	0.560	27 094	32 779	36 278
Italy	3.184	154 014	186 330	206 224

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties for the zero-nominal-growth budget*	*2026 contributions by parties for the recommended budget*
Jamaica	-	-	-	-
Japan	8.019	387 957	469 360	519 473
Jordan	-	-	-	-
Kazakhstan	0.133	6 423	7 771	8 601
Kenya	-	-	-	-
Kiribati	-	-	-	-
Kuwait	0.234	11 301	13 672	15 132
Kyrgyzstan	-	-	-	-
Lao People's Democratic Republic	-	-	-	-
Latvia	-	-	-	-
Lebanon	-	-	-	-
Lesotho	-	-	-	-
Liberia	-	-	-	-
Libya	-	-	-	-
Liechtenstein	-	-	-	-
Lithuania	-	-	-	-
Luxembourg	-	-	-	-
Madagascar	-	-	-	-
Malawi	-	-	-	-
Malaysia	0.347	16 807	20 333	22 504
Maldives	-	-	-	-
Mali	-	-	-	-
Malta	-	-	-	-
Marshall Islands	-	-	-	-
Mauritania	-	-	-	-
Mauritius	-	-	-	-
Mexico	1.219	58 969	71 342	78 959
Micronesia (Federated States of)	-	-	-	-
Monaco	-	-	-	-
Mongolia	-	-	-	-
Montenegro	-	-	-	-
Morocco	-	-	-	-
Mozambique	-	-	-	-
Myanmar	-	-	-	-
Namibia	-	-	-	-
Nauru	-	-	-	-
Nepal	-	-	-	-
Netherlands (Kingdom of the)	1.375	66 502	80 457	89 047
New Zealand	0.308	14 923	18 055	19 982
Nicaragua	-	-	-	-
Niger	-	-	-	-
Nigeria	0.182	8 790	10 634	11 769
Niue	-	-	-	-
North Macedonia	-	-	-	-
Norway	0.678	32 793	39 673	43 909
Oman	0.111	5 361	6 486	7 178
Pakistan	0.114	5 506	6 661	7 372

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties for the zero-nominal-growth budget*	*2026 contributions by parties for the recommended budget*
Palau	-	-	-	-
Panama	-	-	-	-
Papua New Guinea	-	-	-	-
Paraguay	-	-	-	-
Peru	0.163	7 872	9 524	10 541
Philippines	0.212	10 239	12 387	13 709
Poland	0.836	40 423	48 905	54 127
Portugal	0.352	17 048	20 625	22 828
Qatar	0.269	12 991	15 717	17 396
Republic of Korea	2.570	124 313	150 396	166 454
Republic of Moldova	-	-	-	-
Romania	0.311	15 068	18 230	20 176
Russian Federation	1.863	90 119	109 029	120 669
Rwanda	-	-	-	-
Saint Kitts and Nevis	-	-	-	-
Saint Lucia	-	-	-	-
Saint Vincent and the Grenadines	-	-	-	-
Samoa	-	-	-	-
San Marino	-	-	-	-
Sao Tome and Principe	-	-	-	-
Saudi Arabia	1.182	57 182	69 180	76 566
Senegal	-	-	-	-
Serbia	-	-	-	-
Seychelles	-	-	-	-
Sierra Leone	-	-	-	-
Singapore	0.503	24 341	29 448	32 592
Slovakia	0.155	7 486	9 056	10 023
Slovenia	-	-	-	-
Solomon Islands	-	-	-	-
Somalia	-	-	-	-
South Africa	0.244	11 784	14 257	15 779
South Sudan	-	-	-	-
Spain	2.130	103 063	124 688	138 000
Sri Lanka	-	-	-	-
State of Palestine	-	-	-	-
Sudan	-	-	-	-
Suriname	-	-	-	-
Sweden	0.870	42 065	50 892	56 325
Switzerland	1.132	54 767	66 259	73 333
Syrian Arab Republic	-	-	-	-
Tajikistan	-	-	-	-
Thailand	0.367	17 773	21 502	23 798
Timor-Leste	-	-	-	-
Togo	-	-	-	-
Tonga	-	-	-	-
Trinidad and Tobago	-	-	-	-
Tunisia	-	-	-	-

Party	*Adjusted United Nations scale with 22 per cent maximum assessment rate considered*	*2025 contributions by parties*	*2026 contributions by parties for the zero-nominal-growth budget*	*2026 contributions by parties for the recommended budget*
Türkiye	0.844	40 810	49 373	54 644
Turkmenistan	-	-	-	-
Tuvalu	-	-	-	-
Uganda	-	-	-	-
Ukraine	-	-	-	-
United Arab Emirates	0.634	30 668	37 102	41 064
United Kingdom of Great Britain and Northern Ireland	4.368	211 292	255 626	282 920
United Republic of Tanzania	-	-	-	-
United States of America	21.963	1 062 500	1 285 438	1 422 681
Uruguay	-	-	-	-
Uzbekistan	-	-	-	-
Vanuatu	-	-	-	-
Venezuela (Bolivarian Republic of)	0.175	8 452	10 225	11 317
Vietnam	-	-	-	-
Yemen	-	-	-	-
Zambia	-	-	-	-
Zimbabwe	-	-	-	-
Total	**100.000**	**4 837 756**	**5 852 835**	**6 477 725**