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**Twelfth meeting of the Conference of
the Parties to the Vienna Convention
for the Protection of the Ozone Layer, part II**
Online, 23–29 October 2021

**Thirty-Third Meeting of the Parties to
the Montreal Protocol on Substances
that Deplete the Ozone Layer**
Online, 23–29 October 2021

**Issues for discussion by and information for the attention of the
Conference of the Parties to the Vienna Convention at its
twelfth meeting (part II) and the Thirty-Third Meeting of the
Parties to the Montreal Protocol**

Note by the Secretariat

Addendum

I. Introduction

1. The present addendum to the note by the Secretariat on issues on the provisional agenda¹ of the combined twelfth meeting (part II) of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer and Thirty-Third Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (the online combined meetings) contains new and updated information that has become available since the preparation of that note. The additional information is set out in section II below, which contains brief summaries of the information provided by the Technology and Economic Assessment Panel in its 2021 report in relation to agenda items 4 (a), 4 (d) and 4 (e), as well as information on nominations to the Panel received by the Secretariat.

2. The information provided by the Technology and Economic Assessment Panel pertaining to the above-mentioned agenda items is set out in the following three volumes of the Panel's 2021 report:²

- (a) Volume 1: Progress report of the Technology and Economic Assessment Panel;
- (b) Volume 5: Evaluation of 2021 critical-use nominations for methyl bromide and related issues;
- (c) Volume 6: Assessment of the funding requirement for the replenishment of the Multilateral Fund for the period 2021–2023.

¹ UNEP/OzL.Conv.12(II)/1–UNEP/OzL.Pro.33/1.

² Available on the portal for the online combined meetings, at <https://ozone.unep.org/meetings/thirty-third-meeting-parties/pre-session-documents>.

II. Overview of items on the agenda of the preparatory segment (23-28 October 2021)

3. The issues covered in the present addendum are provided below in the order in which the respective agenda items are listed in the provisional agenda of the meeting.

Montreal Protocol issues (item 4 of the provisional agenda)

1. Replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol for the period 2021–2023 (item 4 (a) of the provisional agenda)

4. Pursuant to decision XXXI/1, the Technology and Economic Assessment Panel established a task force to prepare a report on the appropriate level of replenishment of the Multilateral Fund for the Implementation of the Montreal Protocol for the triennium 2021–2023, which was issued in May 2020.³ The replenishment report was reviewed and commented on by the parties through an online forum established by the Secretariat, while discussions on its content and on guidance to the task force on further work were conducted during online meetings held in July 2020 and May 2021, respectively. During that process, a document consolidating the parties' comments and the task force responses was produced.⁴ The process following the preparation of the May 2020 replenishment report is summarized in the note by the Secretariat (UNEP/OzL.Conv.12(II)/2–UNEP/OzL.Pro.33/2, paras. 28-34).

5. Following the parties' deliberations at their May 2021 online meeting,⁵ the Panel was requested to update the May 2020 replenishment report, taking into account the corrections and clarifications identified by the Technology and Economic Assessment Panel task force in its document containing responses to the questions and comments of the parties; and the decisions, rules and guidelines agreed by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol up to and including at its eighty-seventh meeting.⁶

6. The updated replenishment report⁷ was issued in September 2021 and is available on the combined meetings portal. The executive summary of the report is set out in annex I to the present addendum, as received from the Panel, without formal editing by the Secretariat. The report is also available on an online forum page established by the Secretariat in connection with a briefing meeting to be held on 18 October 2021 to afford the task force the opportunity to present its updated report and parties the opportunity to ask questions and make general statements.⁸

7. In updating its report, the task force took into account relevant decisions and revisions, including its responses to the corrections requested by parties; decisions and approvals of the eighty-fourth, eighty-fifth, eighty-sixth and eighty-seventh meetings of the Executive Committee, including intersessional approvals as appropriate; decision XXXII/1 on the interim budget for the Multilateral Fund for the Implementation of the Montreal Protocol for the triennium 2021–2023, adopted in November 2020;⁹ and the adjusted consolidated business plan of the Multilateral Fund for 2021–2023.¹⁰ The report also reflects, in the hydrofluorocarbon (HFC) estimated funding scenarios, the updated status of ratification and parties' letters of intent to ratify the Kigali Amendment as at 17 June 2021. The annexes to the initial report have been adjusted accordingly.

8. In carrying out its work, the task force relied on existing cost guidelines under the Multilateral Fund, noting the limitations affecting its estimates where guidelines remained under discussion by the Executive Committee. In the absence of cost guidelines for HFC phase-down, however, the task force developed its own model to estimate the funding required to phase down HFCs for the triennium

³ https://ozone.unep.org/system/files/documents/TEAP_decision_XXXI-1_replenishment-task-force-report_may2020.pdf; and https://ozone.unep.org/system/files/documents/TEAP_decision_XXXI-1_replenishment-task-force-report_may2020-corrigendum.pdf.

⁴ https://ozone.unep.org/system/files/documents/TEAP_Replenishment_Task_Force_Response_to_comments_FIN_AL_2020-10-11.pdf.

⁵ <https://ozone.unep.org/meetings/43rd-meeting-open-ended-working-group-parties-montreal-protocol>.

⁶ On the understanding that the year 2020 should be considered an abnormal year owing to the pandemic.

⁷ <https://ozone.unep.org/system/files/documents/TEAP-Decision%20XXXI-1-replenishment-TF-report-september-2021.pdf>.

⁸ <https://online.ozone.unep.org/t/replenishment-mop33/128>.

⁹ <https://ozone.unep.org/treaties/montreal-protocol/meetings/thirty-second-meeting-parties/decisions/decision-xxxii1-interim-budget-multilateral-fund-implementation-montreal-protocol-triennium-2021>.

¹⁰ Posted at <http://www.multilateralfund.org/default.aspx> on 31 May 2021.

2021–2023, on the basis of the best available information, established practices, experiences in hydrochlorofluorocarbon (HCFC) phase-out implementation and available Executive Committee decisions.

9. Through a detailed analysis, the total funding requirement for the replenishment of the Multilateral Fund in the triennium 2021–2023 was estimated at between \$417.5 million and \$779.6 million. Funding requirements were estimated on the basis of a business-as-usual scenario and three additional scenarios based on different levels of ratification of the Kigali Amendment to the Montreal Protocol by parties operating under paragraph 1 of Article 5 of the Montreal Protocol (Article 5 parties), as shown in table 1. The estimates were derived from calculations of the funding requirements for components related to the HCFC phase-out and the HFC phase-down, as well as institutional strengthening and other standard activities (i.e. costs related to the implementing agencies, the Multilateral Fund secretariat and the Treasurer).

Table 1
Range of total funding requirements for the replenishment of the Multilateral Fund for the period 2021–2023 based on different scenarios as specified in the task force report
 (United States dollars)

<i>Triennium 2021–2023</i>	<i>Low end with HFC BAU^a</i>	<i>Low end with HFC scenario 1^b</i>	<i>Low end with HFC scenario 2^c</i>	<i>High end with HFC scenario 3^d</i>
<i>HCFC activities</i>	267 862 000	267 862 000	267 862 000	267 862 000
<i>HFC activities</i>	39 969 000	241 097 000	357 008 000	366 212 000
<i>Institutional strengthening and standard activities</i>	109 707 000	109 707 000	109 707 000	145 560 000
Grand total	417 538 000	618 666 000	734 577 000	779 634 000

^a Business-as-usual (BAU) scenario, based on the adjusted consolidated business plan of the Multilateral Fund for the period 2021–2023.

^b Based on the 84 countries that had ratified the Kigali Amendment as at 17 June 2021, plus low-end estimates for HCFC activities and a low-end estimate for institutional strengthening.

^c Based on the 142 countries that, as at 17 June 2021, had ratified the Kigali Amendment and/or sent letters of intent to ratify to the secretariat of the Multilateral Fund (as per the criteria for accessing “enabling activities funding”),¹¹ plus high-end estimates for HCFC activities and a low-end estimate for institutional strengthening.

^d Based on the assumption that all 144 Article 5 countries will ratify the Kigali Amendment in the triennium 2021–2023, plus high-end estimates for HCFC activities and a high-end estimate for institutional strengthening.

10. In its report, the task force provides a detailed account of the calculations of the various components and the assumptions involved in addressing the provisions of decision XXXI/1. It also notes that estimates for funding destruction activities are not provided, as there was no specific guidance on that issue in the terms of reference for the study; however, the task force has included considerations pertaining to the destruction of controlled substances, noting that parties may wish to consider such issues for future trienniums.

11. While acknowledging the potentially significant impact that the coronavirus disease (COVID-19) pandemic has had and will continue to have on the global and national economies, the task force indicates that it has not taken the changing global scenario and its potential implications for funding and project implementation under the Montreal Protocol into account in its estimates, as it lacked sufficient information and guidance to do so; however, it provides some reflections on potential impacts in annex 5 to the report.

12. In accordance with its terms of reference, the task force also provides indicative funding requirement ranges for the subsequent two trienniums, 2024–2026 and 2027–2029, shown in table 2 below. The range of funding estimates is based on the continuation of HCFC phase-out activities, following the same methodology as for the triennium 2021–2023, and, for HFC activities, using the same methodology as for the triennium 2021–2023 and considering scenario 3, with all countries ratifying the Kigali Amendment according to two time frames: by 2023 and by 2025. The range also includes estimates for institutional strengthening and standard activities based on the methodology used in scenario 3.

¹¹ See annex 8 of the task force report.

Table 2
Indicative total funding requirement for the replenishment of the Multilateral Fund for the trienniums 2024–2026 and 2027–2029
 (United States dollars)

<i>Triennium</i>	<i>Total funding requirement range^a</i>	
	<i>All countries ratify by 2023</i>	<i>All countries ratify by 2025</i>
2024–2026	811 000 000	759 000 000
2027–2029	842 000 000	803 000 000

^a Estimates are based on continuation of HCFC phase-out activities following the same methodology as for the triennium 2021–2023; scenario 3, where all countries ratify the Kigali Amendment by 2023 and by 2025; and the high-end scenario for institutional strengthening and standard activities.

13. As is indicated in the note by the Secretariat (UNEP/OzL.Conv.12(II)/2–UNEP/OzL.Pro.33/2, para. 34), the logistical challenges of the online meetings may not render a full negotiation on the budget amount for the triennium 2021–2023 possible. The parties may therefore wish to consider deferring the full negotiation of the replenishment to 2022 and instead consider adopting a decision, if and as appropriate, on the interim budget of the Multilateral Fund, as well as a decision on the 2022 contributions by parties not operating under paragraph 1 of Article 5 of the Montreal Protocol (non-Article 5 parties) to facilitate payment. Any proposals received from the parties on the matter will be posted in the online forum, under the dedicated tab on the replenishment of the Multilateral Fund, to facilitate review and commenting.

2. Nominations for methyl bromide critical-use exemptions for 2022 and 2023 (item 4 (d) of the provisional agenda)

14. As is mentioned in the note by the Secretariat (UNEP/OzL.Conv.12(II)/2–UNEP/OzL.Pro.33/2, paras. 44–47), the Methyl Bromide Technical Options Committee of the Technology and Economic Assessment Panel evaluated a total of four nominations for critical-use exemptions submitted in 2021. One Article 5 party, Argentina, submitted two nominations for 2022, and two non-Article 5 parties, Australia and Canada, submitted one nomination each, for 2023 and 2022 respectively.¹²

15. The total amount of methyl bromide requested by the three nominating parties for 2022 and 2023 is 29.107 tonnes, representing a 67 per cent reduction from the total amount requested (by four parties) in 2020.

16. In accordance with customary practice, the Committee evaluated the nominations and made interim recommendations for authorization of the total nominated amount on the basis that nominating parties had either made significant reductions or did not have access to feasible alternatives. The findings of that evaluation and the interim recommendations were set out in volume 2 of the Technology and Economic Assessment Panel’s 2021 report,¹³ which was made available to the parties during the online work of the Open-ended Working Group for its forty-third meeting, from May to July 2021.

17. In the absence of any requests for reassessment, the Committee prepared its final report,¹⁴ in which it recommends approval of the full amount nominated by Argentina, Australia and Canada. The final recommendations for each nomination are set out in table 3 below.

¹² Another Article 5 party that nominated critical-use exemptions in recent years, South Africa, indicated that it would not put forward nominations this year, as it had used little methyl bromide in 2020 due to the COVID-19 pandemic and therefore had stocks for current treatments; however, it noted that it would consider applying for future years.

¹³ Technology and Economic Assessment Panel. Report of the Technology and Economic Assessment Panel (May 2020). Volume 2: Evaluation of 2021 Critical-Use Nominations for Methyl Bromide and Related Issues – Interim Report. Available at <https://ozone.unep.org/system/files/documents/TEAP-CUN-interim-report-may-2021.pdf>.

¹⁴ Technology and Economic Assessment Panel (2021). Volume 5: Evaluation of 2021 Critical-Use Nominations for Methyl Bromide and Related Issues – Final Report. Available at <https://ozone.unep.org/system/files/documents/TEAP-CUN-final-report-september-2021.pdf>.

Table 3
Summary of the nominations for 2022 and 2023 critical-use exemptions for methyl bromide submitted in 2021 and the final recommendations of the Methyl Bromide Technical Options Committee
 (Metric tons)

<i>Party</i>	<i>Nomination for 2022</i>	<i>Final recommendation for 2022</i>	<i>Nomination for 2023</i>	<i>Final recommendation for 2023</i>
Non-Article 5 parties and sectors				
1. Australia				
Strawberry runners			14.49	[14.49]
2. Canada				
Strawberry runners	5.017	[5.017]		
Subtotal	5.017	[5.017]	14.49	[14.49]
Article 5 parties and sectors				
3. Argentina				
Tomato	5.90	[5.90]		
Strawberry fruit	3.70	[3.70]		
Subtotal	9.60	[9.60]		
Total	14.617	[14.617]	14.49	[14.49]

18. In addition to the final recommendations on critical-use nominations, the report of the Methyl Bromide Technical Options Committee recalls the reporting requirements under relevant decisions and provides information on trends in methyl bromide critical-use nominations and exemptions for all nominating parties to date; the reported accounting frameworks for critical uses and stocks of methyl bromide; and the submission of national management strategies for the phase-out of critical uses of methyl bromide.

19. Based on the accounting framework information received from the nominating parties in 2021, no stocks were reported to be available at the end of 2020. The Committee reiterates in its report, however, that the accounting information does not accurately show the total stocks of methyl bromide held globally for controlled uses by Article 5 parties, as some parties have no formal mechanism for accurately accounting either for such stocks or for stocks used in quarantine and pre-shipment applications, and there is no requirement for parties under the Montreal Protocol to report pre-2015 stocks. According to the Committee, such stocks may be substantial (approximately 1,500 tonnes) and are likely being used for controlled uses for which alternatives may exist.

20. With regard to national management strategies for the phase-out of critical uses of methyl bromide, recent decisions¹⁵ have reiterated the requirement for Article 5 parties requesting critical-use exemptions to submit such strategies in accordance with paragraph 3 of decision Ex.I/4. The Methyl Bromide Technical Options Committee reports that no detailed management plans were received from Argentina in this round of nominations but notes the progress made by the party in reducing its nominated amounts.

21. The final report of the Methyl Bromide Technical Options Committee containing its final recommendations is also available in a corresponding tab of the online forum for the combined meetings so that parties may post comments and questions thereon. The online forum will be open from 13 September to 4 October 2021. The Committee will take into consideration the questions raised and comments made in the forum in its presentation at the online combined meetings.¹⁶

22. The parties may wish to consider the final report and recommendations of the Methyl Bromide Technical Options Committee and adopt decisions on critical-use exemptions as appropriate.

3. Technology and Economic Assessment Panel membership changes (item 4 (e) of the provisional agenda)

23. In its 2021 progress report, the Technology and Economic Assessment Panel elaborates on organizational issues related to each of its technical options committees, including the specific

¹⁵ Decisions XXXI/4 and XXXII/3.

¹⁶ Any draft decision submitted by parties on the matter will also be posted in the online forum for the parties to review and comment on, as appropriate.

expertise needed.¹⁷ Information on the status of the membership of the Technology and Economic Assessment Panel and its technical options committees as at August 2021 is included in annex 1 to the progress report.

24. Table 4 lists the members of the Technology and Economic Assessment Panel whose membership expires at the end of 2021 and whose reappointment requires a decision by the Meeting of the Parties. The members of the technical options committees whose membership expires at the end of 2021 and whose reappointment does not require a decision by the Meeting of the Parties are listed in annex II to the present addendum.

Table 4

Members of the Technology and Economic Assessment Panel whose membership expires at the end of 2021 and whose reappointment requires a decision by the Meeting of the Parties

<i>Name</i>	<i>Position</i>	<i>Country</i>
Ray Gluckman	TEAP senior expert	United Kingdom of Great Britain and Northern Ireland
Marco Gonzalez	TEAP senior expert	Costa Rica
Rajendra Shende	TEAP senior expert	India
Sergey Kopylov	HTOC co-chair	Russian Federation
Roberto Peixoto	RTOC co-chair	Brazil
Marta Pizano	MBTOC co-chair	Colombia
Ian Porter	MBTOC co-chair	Australia
Helen Tope	MCTOC co-chair	Australia
Helen Walter Terrinoni	FTOC co-chair	United States of America

Abbreviations: TEAP – Technology and Economic Assessment Panel; FTOC – Flexible and Rigid Foams Technical Options Committee; HTOC – Halons Technical Options Committee; MBTOC – Methyl Bromide Technical Options Committee; MCTOC – Medical and Chemicals Technical Options Committee; RTOC – Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee.

25. Parties may wish to submit nominations, as necessary, in accordance with paragraph 3 of decision XXXI/8, whereby they are requested, “when nominating experts to the Panel, its technical options committees or its temporary subsidiary bodies, to use the Panel’s nomination form and associated guidelines so as to facilitate the submission of appropriate nominations, taking into account the matrix of needed expertise, and geographical and gender balance, in addition to the expertise needed to address new issues related to the Kigali Amendment, such as energy efficiency, safety standards and climate benefits”. In paragraph 5 of the same decision, the parties are urged “to follow the terms of reference of the Panel, consult the Panel’s co-chairs and refer to the matrix of needed expertise prior to making nominations for appointments to the Panel”. The matrix of needed expertise for 2021, set out in annex 2 to the Panel’s 2021 progress report, is reproduced in annex III to the present addendum and is posted on the Ozone Secretariat’s website.¹⁸

26. In accordance with paragraph 4 of decision XXXI/8, the Secretariat will make the forms submitted by parties nominating members to the Panel available on the meeting portal for the online combined meetings to make it easier for parties to review and discuss the proposed nominations.

27. Nominations to the technical options committees other than for co-chair positions, as well as nominations to temporary subsidiary bodies, can be made at any time. Appointments are made by the co-chairs of the relevant committees in consultation with the Panel.

28. By the time of preparation of the present addendum, the Secretariat had already received a submission from the Russian Federation nominating Mr. Sergey Kopylov, currently a co-chair of the Halons Technical Options Committee, to continue serving on the Technology and Economic Assessment Panel in that role for an additional period of four years; and a submission from the United Kingdom nominating Mr. Ray Gluckman, currently a senior expert on the Technology and

¹⁷ As indicated in the note by the Secretariat (UNEP/OzL.Conv.12(II)/2–UNEP/OzL.Pro.33/2, paras. 48–50), the Technology and Economic Assessment Panel will present its full 2021 progress report, including its membership changes, at a three-hour briefing to be held on 7 October 2021. The presentation will be followed by a session for questions and answers and general statements. Other issues covered in the progress report, including progress on alternatives in the sectors that use controlled substances and organizational and administrative matters, will be considered by the parties at a future meeting.

¹⁸ See <https://ozone.unep.org/science/assessment/teap/teap-expertise-required>.

Economic Assessment Panel, to continue serving on the Panel in that role for an additional period of one year. The completed nomination forms and the curricula vitae of the nominees are posted on the portal of the combined meetings.

29. The parties may wish to consider these nominations, along with any others that the Secretariat may receive prior to and during the online combined meetings.

Annex I

2021 Report by the Technology and Economic Assessment Panel Volume 6*

Assessment of the funding requirement for the replenishment of the Multilateral Fund for the period 2021-2023

Executive Summary

Decision XXXI/1 of the Thirty-First Meeting of the Parties (MOP-31) provided the terms of reference (TOR) for the work of the Technology and Economic Assessment Panel (TEAP) to prepare a report on the appropriate level of the replenishment of the Multilateral Fund (MLF) for the triennium 2021-2023. The parties requested the TEAP to prepare a report for submission to the Thirty-Second Meeting of the Parties (MOP-32), and to present it to the Open-ended Working Group (OEWG) at its 42nd meeting (OEWG-42), to enable MOP-32 to take a decision.

The TEAP established a Replenishment Task Force (RTF), with members from TEAP, its Technical Options Committees (TOCs), and other outside experts. In December 2019, RTF attended the 84th meeting of the Executive Committee of the MLF (ExCom-84) to conduct informal discussions with ExCom members, Bilateral and Implementing Agencies present at that meeting.

In its May 2020 report, the RTF calculated the funding requirements based on the “Consolidated Business Plan of the Multilateral Fund for 2020-2022,”¹ relevant decisions of the ExCom at its 84th meeting, and information available through the Multilateral Fund Secretariat (MLFS). The RTF relied on existing cost guidelines under the MLF and, where these remained under discussion in the ExCom (i.e., cost implications of parallel or integrated implementation of HCFC phase-out, cost guidelines for hydrofluorocarbon (HFC) phase-down activities and review of Institutional Strengthening), the RTF noted these limitations in its estimates. Since funding guidelines to phase down HFCs are still under discussion, the RTF relied on existing cost guidelines under the MLF, where available.

The RTF’s work began in late 2019 and continued in early 2020 through a fast-changing global landscape as the world’s attention turned to addressing the COVID-19 pandemic. While acknowledging the potentially substantial impact the pandemic will have on world economies now and in the future, the RTF estimates of the funding requirements for the replenishment of the MLF in the 2021-2023 triennium have not taken into account the changing global scenario and the potential implications for funding and project implementation under the Montreal Protocol. The RTF has lacked sufficient information and guidance to project the future impact, especially with the pandemic still continuing around the world. Annex 5 provides some preliminary considerations of these potential impacts to relevant sectors.

RTF co-chairs presented its May 2020 report on the assessment of the funding requirements for the replenishment of the MLF for the triennium 2021-2023 to OEWG-42 which, owing to COVID-19, was conducted online with the agenda dedicated to discussing the matter of replenishment alone. The online meeting comprised three substantially identical technical sessions held on 14, 15 and 16 July 2020 to accommodate the different world time zones.

A dedicated online forum² was established by the Ozone Secretariat (OS) in advance of the meeting to enable parties to submit comments on the RTF report including questions, suggestions for additional information, general considerations as well as any other comments. The online forum was open for submission of party comments well in advance of the online meeting, from 8 June 2020 to 6 July 2020 (round 1), and after the online meeting, from 17 July 2020 to 1 August 2020 (round 2). The RTF took these advance questions and comments into consideration when developing its presentation for the OEWG-42 online session. Comments and questions submitted by parties during the online sessions,

* The annex has not been formally edited.

¹ UNEP/OzL.Pro/ExCom/84/26

² <https://online.ozone.unep.org/t/teap-replenishment-task-force-report-assessment-of-the-funding-requirements-for-the-replenishment-of-the-multilateral-fund-for-2021-2023/19>.

including through the chat box of the online platform, were addressed by the RTF during the meeting as time allowed.

All comments received from parties during the two rounds of the online forum were compiled by the co-chairs of OEWG-42. The RTF responded to comments in its document, “TEAP Replenishment Task Force responses to comments and questions submitted by the parties,” posted on 12 October 2020.

Decision XXXI/1 requested the TEAP to “take into account, among other things, ... [all] control measures and relevant decisions agreed upon by the parties to the Montreal Protocol and the Executive Committee of the Multilateral Fund including ... the decisions of the ... the Executive Committee at its meetings, up to and including its eighty-fifth meeting, insofar as those decisions will necessitate expenditure by the Multilateral Fund during the period 2021–2023.” Due to the pandemic the 85th and 86th meetings of the ExCom could not be held in person, the ExCom “agreed to implement, on an exceptional basis and without setting a precedent, the intersessional approval process (IAP)” and a secure online forum.³ The IAP established for the 85th meeting commenced on 4 May 2020 and concluded on 8 June 2020, allowing the approval of \$35 million for projects and activities and all but two reports of projects with specific reporting requirements, along with the consideration of specific issues identified during project review. As required by the decision by the parties, the RTF considered the projects approved intersessionally in 2020 and the decisions by the ExCom up to and including the 85th meeting in this update of its estimated funding requirement for the MLF in the triennium 2021-2023.

Owing to the COVID-19 pandemic, MOP-32 was held online with a reduced agenda from 23 to 27 November 2020. The agenda item on replenishment was “to ensure that the work of the Executive Committee of the Multilateral Fund could continue into 2021, given that the present fiscal period of the Multilateral Fund would finish at the end of 2020 and the COVID-19 pandemic had meant that the parties had been unable to meet face to face in 2020 to discuss the replenishment of the Fund for the fiscal period 2021–2023.”⁴ Two decisions by parties were relevant to the work of the RTF. In one decision of MOP-32, Decision XXXII/1, parties agreed to adopt an interim budget for the MLF for the triennium 2021-2023 of US\$ 268 million⁵:

To adopt an interim budget for the Multilateral Fund for the Implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer for the triennium 2021–2023 of \$268 million, prioritizing those funds for the year 2021 as part of the triennium 2021–2023, until such time as the Parties adopt a final decision on replenishment, including a revised budget, for the triennium 2021–2023, on the understanding that the interim budget will be provided from anticipated contributions due to the Multilateral Fund and other sources for the triennium 2018–2020.

Section 2.6 of the TEAP Terms of Reference⁶ required a decision of the MOP to confirm any temporary subsidiary body (e.g., task force) that exists for a period of more than one year. Hence, parties adopted a further decision, Decision XXXII/7 in which parties confirmed that the TEAP RTF could “continue [its] work up to including at the Thirty-Third Meeting of the Parties.”⁷ In December 2020, RTF co-chairs notified members of their continued appointment to the task force in 2021.

Owing to the continuing COVID-19 pandemic and related travel restrictions in 2021, the forty-third meeting of the Open-ended Working Group (OEWG-43) was held as an online session on 22 and 24 May 2021, where parties considered guidance to the TEAP RTF on whether a supplementary report or an update to the RTF May 2020 report was required to support the negotiations on replenishment for the period 2021-2023. After their discussions, parties requested the TEAP to “update the May 2020 report, as needed, to take into account ... the corrections and clarifications identified in the TEAP Task Force Responses document ... [and] [decisions], rules and guidelines agreed by the Executive Committee up to and including its 87th meeting.” The ExCom-87 meetings were held on-line over a number of sessions in July 2021, in which the RTF participated.

³ UNEP/OzL.Pro.32/7

⁴ UNEP/OzL.Conv.12(I)/6–UNEP/OzL.Pro.32/8 https://ozone.unep.org/system/files/documents/COP-12-i-6_MOP-32-8E.pdf.

⁵ UNEP/OzL.Conv.12(I)/6/Add.1–UNEP/OzL.Pro.32/8/Add.1.

⁶ Annex to decision XXIV/8, “Terms of reference of the Technology and Economic Assessment Panel and its technical options committees and temporary subsidiary bodies” (<https://ozone.unep.org/node/1953>)

⁷ UNEP/OzL.Conv.12(I)/6/Add.1–UNEP/OzL.Pro.32/8/Add.1 (https://ozone.unep.org/system/files/documents/COP-12-i-6-Add1_MOP-32-8-Add1E.pdf)

This RTF September 2021 report submitted to MOP-33, utilises information including:

- Its responses to the corrections requested by parties (October 2020 RTF Responses to Consolidated Comments);
- Decisions and approvals of the 84th, 85th, 86th, and 87th ExCom meetings (including intersessional approvals as appropriate);
- Relevant decisions of parties at MOP-32 (e.g., interim MLF budget);
- With an “Adjusted Consolidated Business Plan of the Multilateral Fund for 2021-2023”⁸ covering the full triennium period 2021-2023, and not only 2020-2022, the RTF used those new values instead of estimating HPMP funding and removed sections of Ch. 2 in the report which were no longer needed;
- RTF has made updates to the Annexes including deleting the former Annex 3 on decisions from the 84th ExCom given the number of additional funding decisions taken since that meeting that are already available on the MLFS meeting webpages;
- RTF has updated other annexes and included annexes with information from our October 2020 Responses to Consolidated Comments document;
- In response to comments from parties on our May 2020 report, RTF has incorporated for Institutional Strengthening (IS) simpler low- and high-end scenarios of estimated funding which is BAU as in the adjusted Consolidated BP for the MLF 2021-2023 and a 100% increase from the BAU, respectively;
- RTF has updated the status of ratifications and letters of intent to join the Kigali Amendment as of 17 June 2021 (as in the OS website), and the HFC estimated funding scenarios were re-calculated based on that;

RTF has corrected the list of LVCs to include Nepal which was mistakenly left off, bringing the total number of LVC countries to 89 from 88; this has been updated in the table of LVC countries in the Annex and incorporated as appropriate into aspects of the report. In particular, the special needs of LVCs, were considered through the “maintain and build” approach and estimates were also updated based on 89 LVCs. The RTF updated its funding estimates in this September 2021 report based on the information above.

HCFC Phase-out

The estimate for the HCFC phase-out funding requirement for the 2021-2023 triennium and beyond is based on Article 5 (A5) parties meeting the upcoming reduction targets. The RTF used the adjusted “Consolidated Business Plan of the Multilateral Fund 2021-2023,” to present the costs for activities in the HCFC consumption and production sectors which include the following:

- HCFC consumption sector costs include:
 - Funding for approved HCFC Phase-out Management Plans (HPMPs);
 - Funding for project preparation costs;
 - Funding for planned HPMPs;
 - Funding for verification, and
 - Funding for technical assistance, if any.
- HCFC production sector funding estimates include:
 - Funding for project preparation, and
 - Cost of approved HCFC Production Phase-out Management Plans (HPPMPs), including verification.

HFC Phase-down

The RTF undertook a number of steps including conversions between units [ozone depletion potential (ODP), Global Warming Potential (GWP), metric tonnes, kilograms, and MMTCO₂eq)] to calculate the total estimated funding for an HFC phase-down. To avoid confusion with HPMPs, the May 2020 RTF report referred to HFC phase-down projects as “Kigali HFC Phase-down Management Plans” or “KPMPs”. Subsequently, ExCom determined that these plans will be called “Kigali HFC Implementation Plans” or “KIPs”⁹, and, therefore, the RTF has replaced the term “KPMP” with

⁸ Posted on 31 May 2021 at: <http://multilateralfund.org/default.aspx>

⁹ UNEP/OzL.Pro/ExCom/87/IAP/3.para. 188(b)

“KIPs” in this September 2021 RTF report. In the absence of a specific name for the production sector management plans, RTF kept the same name Kigali HFC Production Phase-down Management Plans (KPPMPs) given in the RTF May 2020 Report.

Estimated funding requirement for the HFC consumption and production sectors include the following:

- HFC consumption sector funding estimates include:
 - Funding for KIPs – approved, project preparation, planned, and estimated;
 - Funding for investment or stand-alone projects;
 - Funding for enabling activities
 - Funding for verification, if any;
 - Funding for the special needs of LVCs as per a “Maintain and Build” approach; and
 - Funding for early activities to avoid growth of high-GWP HFCs.
- HFC production sector funding estimates include:
 - Funding for HFC production sector preparation;
 - Funding for “Kigali HFC Production Phasedown Management Plan” or “KPPMPs”, if any;
 - Funding for HFC-23 mitigation project preparation; and
 - Funding for HFC-23 mitigation.

Decision XXXI/1, paragraph 2(g) requested the TEAP to consider “three scenarios representing different potential levels of ratification of the Kigali Amendment when estimating the funding requirement for the phase-down of HFCs”. The RTF estimated funding requirement for HFC phase-down in the 2021-2023 triennium includes a business-as-usual (BAU) scenario, which is based on the Adjusted Consolidated Business Plan (BP) of the MLF 2021-2023 as an indication of more updated and firm requests from Parties for HCFC and HFC compliance activities. As of 17 June 2021, 84 out of 144 A5 parties had ratified the Kigali Amendment and 142 A5 parties¹⁰ had submitted Letters of Intent to ratify to the MLFS. So, the RTF also considered the following scenarios for HFC in the 2021-2023 triennium based on different potential levels of ratification:

Scenario 1: Countries that had ratified as of 17 June 2021

Scenario 2: Countries that had ratified plus countries with Letters of Intent sent to the MLFS; and

Scenario 3: All countries ratify.

For the 2021-2023 triennium, the RTF responded to parties’ request to take into account the special needs of LVC countries and took a bottom-up approach for the servicing sector funding calculations. The RTF examined the activities gaps and needs expressed by LVC countries during informal consultations with RTF members during ExCom-84, including that during implementation of the HPMPs, several lessons became apparent for countries where consumption is based only on refrigerant servicing. For example, some LVC countries noted that there was insufficient financing for most projects in the context of the enforced thresholds, implementation problems occur often and needed addressing in subsequent stages, and capacity building needs to be repeated and reinforced.

The RTF also took into consideration the potential to integrate HPMPs and KIPs for servicing sector activities in LVC countries based on the approach of “maintain and build” described in the report and estimated additional funding to cover for what RTF understands as funding gaps explained, and considering overlap in the implementation of both HPMP and KIPs will occur. RTF has broken down the needs of LVCs by sector and defined by the period when both HPMP and KIP are implemented in parallel. The RTF estimated the funding requirement for HFC phase-down in the 2021-2023 triennium based on the methodology with compliance targets, and added the activities in the servicing sector and associated estimated costs, as detailed in Annex 7.

In the absence of HFC guidelines on cost effectiveness (CE) values, the RTF considered available CE values for HCFCs, for the servicing and other sectors for all non-LVC countries in both Group 1 and Group 2 categories under the Kigali Amendment.

Following the TOR, the RTF also estimated the funding requirement to support a limited number of stand-alone projects transitioning out of HFCs in accordance with paragraph 4 of decision XXX/5.

¹⁰ Brazil and Yemen have not requested enabling activities to date. Those two countries have not sent letters of intent to ratify the Kigali Amendment to the MLFS.

The RTF has also included estimates for early activities to avoid growth of high-GWP HFCs. Those early activities include giving priority in the 2021-2023 triennium for a) investment projects in high-growth sectors, especially manufacturing sectors (“close the tap” concept); and b) a variety of end-user activities and schemes to transform the market for energy-efficient and lower GWP products. It is clear that servicing/end-user sector activities generate HFC waste during replacement and other activities including refrigerant recovery, and therefore the RTF discusses the need for support for destruction in future triennia.

For the HFC production sector and HFC-23 by-product emission mitigation, the funding requirement includes HFC production sector preparation, HFC-23 mitigation preparation, and HFC-23 mitigation projects. RTF has integrated the cost agreed in principle by the ExCom for the projects submitted by the Governments of Argentina and Mexico, to assess the funding requirements for HFC-23 by-product emission mitigation.

Institutional Strengthening & Standard Activities

The estimated funding requirement also includes institutional strengthening (IS) and Standard Activities. Discussions on funding for IS were initially planned to be considered at the ExCom-85, and postponed to the 86th and again to the 87th ExCom and now to the 88th ExCom meeting. In the absence of guidance, the RTF considered, a) a BAU scenario, based on figures presented in the Adjusted Consolidated BP of the MLF 2021-2023 MLF and b) a scenario that follows the level of increase of funding used at the previous IS review (28%) and 100%.

Ratification scenarios were not taken into consideration for IS calculations.

The estimated funding requirement for standard activities, such as the UNEP Compliance Assistance Programme (CAP), Core Unit of UNDP, UNIDO and the World Bank, MLFS/ExCom and Treasurer, were based on the BAU scenario (based on the Adjusted Consolidated BP of the MLF 2021-2023).

Estimated Total Funding Requirements for the 2021-2023 Triennium

The total estimated funding requirement for the replenishment of the MLF in the 2021-2023 triennium, including support costs, is **US\$ 417.5 – 779.6 million**¹¹ as presented in Tables ES-1 and ES-2 below. Decision XXXI/1, paragraph 2 (g) requested the TEAP to consider “three scenarios representing different potential levels of ratification of the Kigali Amendment when estimating the funding requirement for the phase-down of HFCs”. Results in tables are presented with four columns including a BAU scenario, which is based on the adjusted MLF Consolidated BP of the MLF for 2021-2023. In addition, the RTF looked into three potential ratification scenarios to provide the following estimated funding scenarios for the triennium 2021-2023:

Scenario 1: Estimates based on 84 A5 countries that have ratified (as of 17^h June 2021) plus low-end estimates for HCFC activities and IS (Standard Activities remains the same for all scenarios);

Scenario 2: Estimates based on 142 A5 countries that have ratified and/or countries with letters of intent sent to the MLFS as per criterium on “enabling activities funding” plus high-end estimates for HCFC activities, low-end IS; and

Scenario 3: Estimates based on all 144 A5 countries ratifying plus high-end estimates for HCFC activities and high-end IS.

¹¹ Note: figures may not sum due to rounding.

Table ES-1. Range of Total Funding Requirement Based on Different Scenarios (US\$)

<i>2021-2023 TRIENNIUM</i>	<i>LOW END WITH HFC BAU¹²</i>	<i>LOW END WITH HFC SCENARIO 1¹³</i>	<i>LOW END WITH HFC SCENARIO 2</i>	<i>HIGH END WITH HFC SCENARIO 3</i>
SUBTOTAL – HCFC Activities	\$ 267 862 000	\$ 267 862 000	\$ 267 862 000	\$ 267 862 000
SUBTOTAL – HFC Activities ¹⁴	\$ 39 969 000	\$ 241 097 000	\$ 357 008 000	\$ 366 212 000
SUBTOTAL - IS & Standard Activities	\$ 109 707 000	\$ 109 707 000	\$ 109 707 000	\$ 145 560 000
GRAND TOTAL	\$ 417 538 000	\$ 618 666 000	\$ 734 577 000	\$ 779 634 000

Table ES-2. Total funding requirement for the replenishment of the MLF 2021-2023 (US\$)

<i>2021-2023 Triennium</i>	<i>LOW END</i>	<i>HIGH END</i>
HCFC Consumption Sector		
HCFC Approved HPMPs	\$ 143 567 000	\$ 143 567 000
HCFC Prep Costs	\$ 2 015 000	\$ 2 015 000
HCFC Planned HPMPs	\$ 91 803 000	\$ 91 803 000
HCFC Verification	\$ 1 767 000	\$ 1 767 000
HCFC Technical Assistance	–	–
Subtotal – HCFC Consumption Sector	\$ 239 152 000	\$ 239 152 000
HCFC Production Sector		
HCFC Production Sector Stage I PRP & HPPMP	\$ 5 478 000	\$ 5 478 000
HCFC Production Sector Stage II HPPMP	\$ 23 232 000	\$ 23 232 000
Subtotal – HCFC Production Sector	\$ 28 710 000	\$ 28 710 000

<i>2021-2023 Triennium</i>	<i>BAU / Business Planning</i>	<i>SCENARIO 1: RATIFIED</i>	<i>SCENARIO 2: RATIFIED + LETTERS OF INTENT</i>	<i>SCENARIO 3: ALL COUNTRIES</i>
HFC Consumption Sector				
HFC Approved KIPs	–	–	–	–
HFC Prep Costs	\$ 9 721 000	\$ 14 993 000	\$ 25 438 000	\$ 25 931 000
HFC Planned KIPs	\$ 25 535 000	\$ 25 535 000	\$ 25 535 000	\$ 25 535 000
HFC RTF Estimated KIPs	–	\$ 131 184 000	\$ 155 395 000	\$ 164 106 000
HFC Investment/Stand-Alone Projects	\$ 2 461 000	\$ 14 000 000	\$ 14 000 000	\$ 14 000 000
HFC Enabling Activities	\$ 482 000	\$ 2 122 000	\$ 3 925 000	\$ 3 925 000
HFC Verification	–	–	–	–
HFC Special Needs of LVCs/ Maintain and Build	–	\$ 39 393 000	\$ 63 745 000	\$ 63 745 000
HFC Early Activities to Avoid Growth	–	\$ 10 000 000	\$ 65 000 000	\$ 65 000 000
Subtotal – HFC Consumption Sector	\$ 38 199 000	\$ 237 227 000	\$ 353 038 000	\$ 362 242 000

¹² BAU reflects estimates in the Adjusted Consolidated Business Plan of the MLF for 2021-2023

¹³ Includes parties which ratified the Kigali Amendment as of 17 June 2021.

¹⁴ For the three scenarios of ratification requested by Decision XXXI/1, the RTF for HFC-23 mitigation preparation estimated US\$ 100,000 for Scenario 1 and US\$ 200,000 for Scenarios 2 and 3 (see section 4.4), as reflected in the subtotals for each scenario.

<i>2021-2023 Triennium</i>	<i>LOW END</i>	<i>HIGH END</i>
HFC Production Sector		
HFC Production Sector Prep	–	\$ 2 000 000
HFC Production Sector KPPMP	–	–
HFC Production Sector Verification	–	–
HFC-23 Mitigation Prep	–	\$ 200 000
HFC-23 Mitigation	\$ 1 770 000	\$ 1 770 000
Subtotal – HFC Production Sector	\$ 1 770 000	\$ 3 970 000

<i>2021-2023 Triennium</i>	<i>LOW END</i>	<i>HIGH END</i>
IS and Standard Activities		
IS	\$ 35 853 000	\$ 71 706 000
UNEP CAP	\$ 34 294 000	\$ 34 294 000
UNDP, UNIDO, World Bank Core Unit	\$ 17 858 000	\$ 17 858 000
MLF Secretariat and ExCom Costs	\$ 20 202 000	\$ 20 202 000
Treasurer	\$ 1 500 000	\$ 1 500 000
Subtotal - IS & Standard Activities	\$ 109 707 000	\$ 145 560 000

Annex II

Members of the Technology and Economic Assessment Panel technical options committees^a whose membership expires at the end of 2021 and whose reappointment does not require a decision by the Meeting of the Parties*

<i>Name</i>	<i>Position</i>	<i>Country</i>
Members of technical options committees		
Paul Ashford	FTOC member	United Kingdom of Great Britain and Northern Ireland
Kultida Charoensawad	FTOC member	Thailand
Miguel Quintero	FTOC member	Colombia
Khaled Effat	HTOC member	Egypt
Mohamed Besri	MBTOC member	Morocco
Fred Bergwerff	MBTOC member	Netherlands
Bill Auriemma	MCTOC member	United States of America
Steve Burns	MCTOC member	United Kingdom of Great Britain and Northern Ireland
Rick Cooke	MCTOC member	Canada
Maureen George	MCTOC member	United States of America
B. Narsaiah	MCTOC member	India
Rajiev Sharma	MCTOC member	United Kingdom of Great Britain and Northern Ireland
Jørgen Vestbo	MCTOC member	Denmark
Maria C. Britto Bacellar	RTOC member	Brazil
Herliatika Herlin	RTOC member	Indonesia
Mary E. Koban	RTOC member	United States of America

^a The five technical options committees are: Flexible and Rigid Foams Technical Options Committee (FTOC), Halons Technical Options Committee (HTOC), Methyl Bromide Technical Options Committee (MBTOC), Medical and Chemicals Technical Options Committee (MCTOC) and Refrigeration, Air-Conditioning and Heat Pumps Technical Options Committee (RTOC).

* The annex has not been formally edited.

Annex III

Matrix of expertise needed for the Technology and Economic Assessment Panel as at August 2021*

<i>Body</i>	<i>Required expertise</i>	<i>A5/ Non-A5</i>
Foams TOC	<ul style="list-style-type: none"> • Extruded polystyrene production in India and China • Polyurethane system house technical experts <ul style="list-style-type: none"> ○ Especially in southern Africa, and ○ Especially from small and medium enterprises • Foam chemistry experts globally and expertise in building science related to energy efficiency 	A5 or non-A5
Halons TOC	<ul style="list-style-type: none"> • Civil aviation, especially maintenance, repair and overhaul (called MRO) activities • General civil aviation fire protection applications • Alternatives to halons, HCFCs and high-GWP HFCs and their market penetration • Banking and supplies of halons, HCFCs and high-GWP HFCs and their alternatives • Ship breaking (quantities of halons, HCFCs and high-GWP HFCs and their alternatives contained in ships, and amounts recovered by ship class) 	A5 / non-A5 A5 (SE Asia) A5 (Africa, S America, S Asia) A5 (Africa, S America) A5 or non-A5
Methyl Bromide TOC	<ul style="list-style-type: none"> • Nursery industries, especially the issues affecting the strawberry runner industries globally • QPS uses of MB and their alternatives, recapture technologies 	A5 or non-A5 A5
Medical and Chemical TOC	<ul style="list-style-type: none"> • Destruction technologies, including knowledge of the variety of available technologies and their application • Metered-dose inhalers, in particular an academic and/or clinician who is a medical expert in carbon footprints and environmental impacts of inhalers • Aerosols, including development of new propellants and new aerosol products and components 	A5 and/or non-A5 A5 and/or non-A5 A5 and/or non-A5
Refrigeration TOC	<ul style="list-style-type: none"> • RACHP expert with knowledge of the specific requirements of his/her geographical area • Expert on energy macro-economics aspects related to RAC equipment to provide national, regional, and international analysis related to equipment energy efficiency, energy consumption and market trends 	A5 (sub-Saharan Africa) A5 or non-A5

* The annex has not been formally edited.