

Assessment of the Funding Requirement for the Replenishment of the Multilateral Fund for the Period 2021-2023

October 2021

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Decision XXXI/1: Terms of reference for the study on the 2021–2023 replenishment of the Multilateral Fund

1. To request the TEAP to prepare a report to enable the Parties to adopt a decision on the appropriate level of the 2021–2023 replenishment of the Multilateral Fund (MLF);
2. TEAP should take into account, among other things:
 - a) All control measures and relevant decisions agreed upon by the parties to the Montreal Protocol and the Executive Committee (ExCom) of the MLF, including decision XXVIII/2 and the decisions of the 31st Meeting of the Parties and the ExCom at its meetings, up to and including its 85th meeting, insofar as those decisions will necessitate expenditure by the MLF during the period 2021–2023;
 - b) The need to consider the special needs of low-volume-consuming (LVC) and very-low-consuming countries;**

Decision XXXI/1, cont'd

- c) **The need to allocate resources to enable all parties operating under paragraph 1 of Article 5 of the Montreal Protocol (Article 5 or A5 parties) to achieve and/or maintain compliance with Articles 2A–2J of the Protocol**, taking into account decision XIX/6 of the Meeting of the Parties, and the reductions and extended commitments made by Article 5 parties under approved hydrochlorofluorocarbon (HCFC) phase-out management plans and decision XXVIII/2, and noting that the Panel in its supplementary report shall provide any information or clarification as requested by any party relating to the allocation of resources;
- d) **Decisions, rules and guidelines agreed by the ExCom** at all its meetings, up to and including its eighty-fifth meeting, in determining eligibility for the funding of investment and non-investment projects;

Decision XXXI/1, cont'd

- e) **The need to allocate resources for Article 5 parties to comply with the Kigali Amendment** to the Montreal Protocol, including the preparation and, if needed, the implementation of phase-down plans for hydrofluorocarbons (HFCs) that could include early activities in the servicing/endusers sector in order to comply with the Kigali Amendment by addressing the high growth rate in HFC consumption;
- f) **The need to allocate resources to the low-volume-consuming countries for the introduction of zero-global-warming-potential or low-global-warming-potential alternatives to HFCs and to maintain energy efficiency in the servicing/end users sector**, in line with any relevant decisions of the ExCom;
- g) **Three scenarios representing different potential levels of ratification of the Kigali Amendment** when estimating the funding requirement for the phase-down of HFCs;
- h) **The cost of supporting a limited number of stand-alone projects** transitioning out of HFCs, in accordance with paragraph 4 of decision XXX/5;

Decision XXXI/1, cont'd

3. That the Panel should **provide indicative figures of the resources within the estimated funding required for phasing out HCFCs that could be associated with enabling A5 parties to directly transition from HCFCs to the use of low-global-warming-potential (GWP) or zero-GWP alternatives**, taking into account global warming potential, energy use, safety and other relevant factors. The indicative figures should be provided for a range of typical scenarios, including a LVC country, a small manufacturing country and a medium-sized manufacturing country;
4. That, in preparing the report, **the Panel should consult widely**, including all relevant persons and institutions and other relevant sources of information deemed useful;
5. That the Panel should strive to **complete the report in good time** to enable it to be distributed to all parties two months before the 42nd meeting of the OEWG;
6. That the Panel should **provide indicative figures for the periods 2024–2026 and 2027–2029** to support a stable and sufficient level of funding, on the understanding that those figures and in subsequent replenishment studies.

2020-2021 TEAP Replenishment Task Force (RTF)

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Tasks & Timeline: 2019-2021

In 2019, TEAP established a Replenishment Task Force (RTF):

- December 2019 (Montreal) – attended 84th ExCom and conducted consultations
- January 2020 (Montreal) – held RTF meeting and consultations with MLF Secretariat
- February-June 2020 – held virtual meetings, presented to TEAP, additional consultations

RTF May 2020 Report

- Submitted to OEWG-42 as per TOR
- Based on the “Consolidated BP of the Multilateral Fund for 2020-2022,” relevant decisions of ExCom-84, and information available through the MLFS
- Two comment periods: 8 June–6 July and 18 July – 1 August
- OEWG-42: RTF presentation at technical sessions, 14-16 July 2020

October 2020 RTF Responses to Compiled Comments

Tasks & Timeline: 2019-2021, cont'd

- **MOP-32 (November 2020)** decisions related to replenishment:
 - Dec. XXXII/1: Interim MLF budget for 2021
 - Dec XXXII/7: Extended RTF term until MOP-33 (October 2021)
- **RTF meetings, including ExMOP, OEWG-43, ExCom, and work continued (virtually)** to prepare for a potential request to provide within a short deadline a supplementary or update of May 2020 report.
- **OEWG-43 Replenishment (22-24 May 2021)** guidance to RTF in annex to the meeting report (UNEP/OzL.Pro.WG.1/43/4)

Update the May 2020 report, as needed, to take into account:

- a) The corrections and clarifications identified in the TEAP task force responses document;*
- b) The decisions, rules and guidelines agreed by the Executive Committee up to and including its eighty-seventh meeting.¹*

Footnote 1: On the understanding that the year 2020 should be considered an abnormal year owing to the pandemic situation.

Basis of Updates to RTF Report

- **October 2020 RTF Responses to Consolidated Comments**
- **84th, 85th, 86th, and 87th ExCom decisions** (e.g., Intersessional Approval Processes (IAPs) and project preparation guidelines)
- **MOP-32 decisions** (e.g., interim MLF budget)
- **“Adjusted Consolidated Business Plan of the Multilateral Fund for 2021-2023”**
 - Used those new values instead of estimating HPMP funding
 - Removed sections of Ch. 2 Funding Requirements for HCFC Phase-out from May 2020 RTF Report which were no longer needed

Basis of Updates to RTF Report, cont'd

- **Re-calculated the HFC estimated funding scenarios based on updated status of party ratifications (17 June 2021; OS website), and the number of parties which submitted to the MLFS letters of intent to join the Kigali Amendment**
- **For Institutional Strengthening (IS), RTF has only provided low- and high-end scenarios of estimated funding (responding to comments from parties on our May 2020 report, suggesting RTF avoids presenting hypothetical scenarios)**
- **Corrected the list of LVC countries** and incorporated as appropriate into aspects of the report
- **Deleted and updated annexes:**
 - Deleted Annex 3 from May 2020 Report (obsolete given the number of additional funding decisions taken ExCom-84 since that meeting);
 - Updated other annexes and added new annex (HFC Project Preparation guidelines)

Online Forum Comments (13 Sept-4 Oct)

- **Australia** drafted a decision setting out advance or interim contributions for 2022 in the absence of a final replenishment decision in 2021.
 - Draft Table A lists indicative contributions including Australia, New Zealand, and UK.
- **Canada** drafted a decision for parties to update interim budget for consideration at MOP-33.
- **Norway** requested being added to Australia draft decision Table A and drafted CRP for an ExMOP in 2022 to negotiate replenishment.
- **European Union** supported Australia draft decision and requested all Member States be added to Table A.



Outline of the 2021 Report

Executive Summary

Ch.1 Intro

Ch. 2 Funding Requirements for HCFC

Ch. 3 Funding Requirements for the HFC Phase-down

Ch.4 Funding Requirements for HFC Production Sector
and HFC-23 By-product Emission Mitigation

Ch. 5 Funding Requirements for Institutional
Strengthening and Standard Activities

Ch. 6 Total Funding Requirement for 2021-2023
Triennium

Ch. 7 Indicative Funding Requirement for 2024-2026
and 2027-2029

References

Annexes

Annexes

1. Decision XXVIII/2 – Kigali Amendment
2. Informal consultations on Decision XXXI/1 at ExCom-84
3. List of LVC and Non-LVC countries (**updated**)
4. Estimation of HCFC reduction needed (**updated**)
5. Challenges and opportunities in the HFC phasedown and ODS phaseout while recovering from the COVID-19 pandemic
6. Funding structure and relevant decisions regarding LVC including VLVC countries
7. Servicing sector cost and considerations for Bracket E (LVC) countries (**updated**)
8. List of Kigali Amendment ratifications and letters of intent (**updated**)
9. RTF additional clarification on estimating funding for HFC phase-down (**updated**)
10. Estimating the funding requirements for KIPs (**updated**)
11. Project preparation funding for KIPs (**new**)



Multilateral Fund
for the Implementation of the Montreal Protocol

Overview of the Multilateral Fund

- Since its inception, the MLF has supported 144 A5 parties by providing US\$ 3.83 billion (including support costs) in project funding and capacity building to phase out over 281,000 ODP-tonnes in consumption and 188,920 ODP-tonnes in production of ODS.
- The total income received by the Fund by December 2019 was US\$ 4.07 billion.
- The MLF has also received additional voluntary contributions amounting to over US\$ 25.5 million from a group of donor countries to finance fast-start activities for the implementation of the HFC phase-down.
- At MOP-32 in Decision XXXII/1, parties agreed to adopt an interim budget for the MLF for the triennium 2021-2023 of US\$ 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.”

Replenishments of the MLF (million US\$)

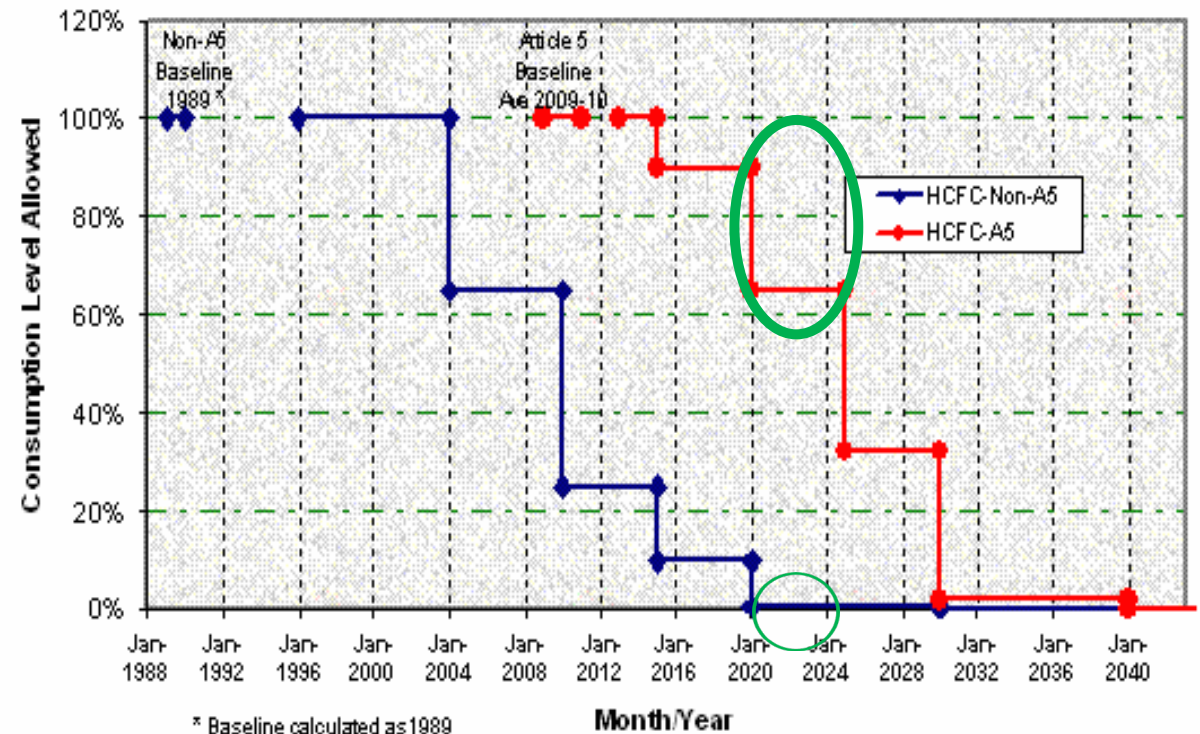
Triennium	Approved	Carry-over	Interest accrued	Total MLF Budget
1994-1996	\$ 455	\$ 55	N/A	\$ 510
1997-1999	\$ 466	\$ 74	N/A	\$ 540
2000-2002	\$ 440	\$ 35.7	N/A	\$ 475.7
2003-2005	\$ 474	\$ 76	\$ 23	\$ 573
2006-2008	\$ 400.4	\$ 59.6	\$ 10	\$ 470
2009-2011	\$ 400	\$ 73.9	\$ 16.1	\$ 490
2012-2014	\$ 400	\$ 34.9	\$ 15.1	\$ 450
2015-2017	\$ 437.5	\$ 64	\$ 6	\$ 507.5
2018-2020	\$ 500	\$ 34	\$ 6	\$ 540
2021-2023	\$ 268	TBD	TBD	TBD

Funding requirement for HCFCs

HCFC Control Measures

Article 5(1) Parties: Consumption	
Base level:	Average 2009-10.
Freeze:	January 1, 2013.
10% reduction	January 1, 2015.
35% reduction	January 1, 2020.
67.5% reduction	January 1, 2025.
100% reduction	January 1, 2030.
	Allowance of 2.5% of base level consumption when averaged over ten years 2030-40 until January 1, 2040, for servicing of refrigeration and air conditioning equipment existing on 1 January 2030.

HCFCs (Annex C/I) Consumption Reduction Schedule



* Baseline calculated as 1989 HCFC consumption + 2.8 per cent of 1989 CFC consumption

HCFC Phase-out Management Plans (HPMPs)

- To meet the compliance schedule, the HCFC Phase-out Management Plans (HPMP) guidelines set out a staged approach to the phase-out of a country's HCFCs within the framework of an overarching strategy.
- The ExCom set out the criteria for funding available for A5s and agreed on a structure for determining funding levels which considered among other things, funding for preparation of HPMPs, overarching strategy, investment projects, sector specific cost effectiveness thresholds, the needs of small and medium-sized enterprises, and the concerns of LVC and Very Low Volume Consuming (VLVC) countries.
- HPMP Key Concepts:
 - Baseline
 - Remaining eligible consumption
 - Cost effectiveness
 - Non-eligible consumption
 - LVC (and VLVC) countries



Overview of HCFC Funding Requirement

HCFC consumption sector funding estimates include:

- Funding for approved 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, including audit and
- Funding for HPPMPs, including verification.

Funding Requirement for HCFC Consumption and Production Sectors (US\$)

HCFC Consumption Sector	
HCFC Approved HPMPs	\$ 143,567,000
HCFC Prep Costs	\$ 2,015,000
HCFC Planned HPMPs	\$ 91,803,000
HCFC Verification	\$ 1,767,000
HCFC Technical Assistance	-
Subtotal – HCFC Consumption Sector	\$ 239,152,000
HCFC Production Sector	
HCFC Production Sector Stage I PRP & HPPMP	\$ 5,478,000
HCFC Production Sector Stage II HPPMP	\$ 23,232,000
Subtotal – HCFC Production Sector	\$ 28,710,000

Indicative Figures for Transition to Low- or Zero-GWP Alternatives (unchanged from 2020 Report)

- In response to Paragraph 3 of Decision XXXI/1, the RTF focused on providing examples of HCFC phaseout projects that transitioned to low- or zero-GWP alternatives.
- Medium-Sized Manufacturing Country Example: Egypt
 - HCFC-141b to Cyclopentane **US\$ 7.12/kg ODS**
 - HCFC-141b to HFO-1234ze/DME (60/40) blend **US\$ 4.42/kg ODS**
- Small Manufacturing Country Example: Morocco
 - HCFC-141b to Cyclopentane: **US\$ 5.32/kg ODS**
- Low-Volume Consuming Country Example: Costa Rica
 - Pilot for the “Replacement of a HCFC-22 refrigeration system by a R-717/R-744 (NH₃/CO₂) system in cold storage warehouse with a cooling capacity of 176 kW (50 TR)
→ **US\$ 19.27/kg ODS, assuming 20-year lifetime**
 - Recovered 909 kg of HCFC-22 and avoided annual leaks of 1,314 kg of HCFC-22
 - Better temperature control with 10% reduction in the energy bill (first two months of operation)

Estimating funding requirement for HFCs

HFC Control Measures

Annex F: Hydrofluorocarbons

Applicable to production and consumption.

Non-Article 5 parties		Article 5 parties – Group 1		Article 5 parties – Group 2	
Baseline	Average HFC for 2011–2013 + 15% of HCFC baseline*	Baseline	Average HFC for 2020–2022 + 65% of HCFC baseline	Baseline	Average HFC for 2024–2026 + 65% of HCFC baseline
Freeze	–	Freeze	January 1, 2024	Freeze	January 1, 2028
10* per cent reduction	January 1, 2019	10 per cent reduction	January 1, 2029	10 per cent reduction	January 1, 2032
40* per cent reduction	January 1, 2024	30 per cent reduction	January 1, 2035	20 per cent reduction	January 1, 2037
70 per cent reduction	January 1, 2029	50 per cent reduction	January 1, 2040	30 per cent reduction	January 1, 2042
80 per cent reduction	January 1, 2034	80 per cent reduction	January 1, 2045	85 per cent reduction	January 1, 2047
85 per cent reduction	January 1, 2036				

* For Belarus, Kazakhstan, the Russian Federation, Tajikistan and Uzbekistan, 25% HCFC component of baseline and different initial two steps (1) 5% reduction in 2020 and (2) 35% reduction in 2025

Group 1: Article 5 parties not part of Group 2

Group 2: Bahrain, India, the Islamic Republic of Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia and the United Arab Emirates

Steps to Calculate Indicative Figures for the Total Cost of HFC Phasedown

- Step 1: Establish Country Brackets (A through E)*
- Step 2: Calculate HFC Baseline using the 2016 TEAP Report**
- Step 3: Apply transition assumptions to HCFC Baseline to determine HFC Sector Distribution
- Step 4: Apply Cost Effectiveness Factors
- Step 5: Calculation Results

*HFC consumption estimated separately for Group 1 and Group 2 countries.

**Decision EX.III/1 Working Group Report: On the climate benefits and costs of reducing HFCs under the Dubai Pathway

Step 1: Establish Country Brackets based on HCFC Consumption

Bracket (mt HCFCs)	Countries
A: >25,001	China
B: 10,001 – 25,000	Brazil, India , Mexico, Saudi Arabia , Thailand
C: 2,001 – 10,000	Argentina, Colombia, Egypt, Indonesia, Iran , Kuwait , Malaysia, Nigeria, Pakistan , Philippines, South Africa, Turkey, Venezuela, Vietnam, Yemen
D: < 2,000 non LVC	Afghanistan, Algeria, Bahrain , Bangladesh, Benin, Cameroon, Chile, Cote d'Ivoire, Dominican Republic, Gabon, Ghana, Guinea, Iraq , Jordan, Kenya, DPR Korea, Lebanon, Libya, Madagascar, Mauritania, Morocco, Nepal, Niger, Oman , Panama, Peru, Qatar , Senegal, Somalia, Sudan, Syria, Togo, Trinidad and Tobago, Tunisia, Uruguay
E: LVC	Albania, Angola, Antigua and Barbuda, Armenia, Bahamas, Barbados, Belize, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Chad, Comoros, Congo, Congo DR, Cook Islands, Costa Rica, Cuba, Djibouti, Dominica, Ecuador, El Salvador, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Fiji, Gambia, Georgia, Grenada, Guatemala, Guinea-Bissau, Guyana, Haiti, Honduras, Jamaica, Kiribati, Kyrgyzstan, Lao PDR, Lesotho, Liberia, Macedonia FYR, Malawi, Maldives, Mali, Marshall Islands, Mauritius, Micronesia, Moldova Rep, Mongolia, Montenegro, Mozambique, Myanmar, Namibia, Nauru, Nepal, Nicaragua, Niue, Palau, Papua New Guinea, Paraguay, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Serbia, Seychelles, Sierra Leone, Solomon Islands, South Sudan, Sri Lanka, Suriname, Tanzania, Timor Leste, Tonga, Turkmenistan, Tuvalu, Uganda, Vanuatu, Zambia, Zimbabwe

Step 2: Calculate HFC Baseline

- HFC Baseline Formulas:
 - Group 1 = $\left(100\% \times \frac{HFC\ 2020 + HFC\ 2021 + HFC\ 2022}{3}\right) + (65\% \times HCFC\ Baseline)$
 - Group 2 = $\left(100\% \times \frac{HFC\ 2024 + HFC\ 2025 + HFC\ 2026}{3}\right) + (65\% \times HCFC\ Baseline)$
- Two methods were used to validate the HFC consumption in the 2016 TEAP report.
- The first method used the HCFC baseline in 2009/2010 and a annual growth rate of 3% from 2009 based on the International Monetary Fund Gross Domestic Product including the influence of exports of products containing refrigerant.
- The second method used the 2017 “IHS Markit” report fluorocarbon usage and refrigerant annual growth rate (7.8%) from 2017.
- The Task Force concluded that the 2016 TEAP methodology provided a reasonable approximation of the HFC portion of the baseline based on two validations.
- The Task Force did not create a baseline estimate based on the pandemic.

Step 3: Sector Distribution

RTF's sector distribution is estimated based on:

- Transition assumptions from HCFCs to HFCs and other products
- HFC consumption in sectors where HCFCs were not used
- Market growth assumptions
- Differentiation between country brackets
- Differentiation between Group 1 and Group 2 countries
- 3% growth in all markets per year from 2009

Transition Assumptions from HCFCs to HFCs

Manufacturing

- HCFC-22 was assumed to convert to 1/3 HFCs for commercial refrigeration and 2/3 HFCs for AC.
- Assumption for HFC-134a in domestic appliances and mobile air conditioning (MAC) are based on a percentage of the total HFC baseline.
 - Domestic appliances: HFC-134a consumption estimated at 2% of total HFC baseline.
 - MAC: HFC-134a consumption estimated at 6% of total HFC baseline.

Servicing

- Servicing was also estimated by country bracket.
- MAC estimate includes refrigerant used in servicing and manufacturing new vehicles.

Transition Assumptions for HFC Consumption Sectors

Percentage Distribution of Transition to HFC by Bracket and by Sector

HCFC-22 Conversion by Bracket	Refrigeration and Stationary AC Servicing	Industrial Commercial Refrigeration	Stationary Air Conditioning
Bracket A	25%	25%	50%
Bracket B	50%	17%	33%
Bracket C	50%	17%	33%
Bracket D	75%	8%	17%
Bracket E	100%	0%	0%

Bracket and Group Sector Percentage

	Servicing	Domestic Ref	ICR	Stationary A/C	MAC*	Foam XPS	Foam PUR	Aerosol	Fire Sup.	Solvents
Bracket A	20.8%	3.0%	31.5%	31.2%	9.0%	1.6%	1.3%	1.5%	0.0%	0.1%
Bracket B	42.5%	2.8%	21.4%	21.2%	8.5%	0.1%	1.9%	1.4%	0.1%	0.2%
Bracket B Group 2	40.9%	3.1%	20.6%	20.4%	9.4%	1.9%	1.9%	1.6%	0.1%	0.2%
Bracket C	42.2%	2.9%	21.3%	21.0%	8.7%	0.8%	1.5%	1.4%	0.1%	0.1%
Bracket C Group 2	40.6%	3.2%	20.5%	20.3%	9.5%	2.1%	2.1%	1.6%	0.0%	0.2%
Bracket D	65.0%	2.7%	10.9%	10.8%	8.1%	0.3%	0.7%	1.4%	0.0%	0.1%
Bracket D Group 2	65.4%	2.7%	11.0%	10.9%	8.0%	0.7%	0.0%	1.3%	0.0%	0.0%
Bracket E	87.7%	2.6%	0.1%	0.1%	7.8%	0.1%	0.1%	1.3%	0.0%	0.0%

* MAC includes servicing

Step 4: Cost-Effectiveness Factors (Groups 1 & 2)

- Because there are no HFC Guidelines with agreed cost-effectiveness thresholds, the RTF based estimates on informed cost-effectiveness factors (US\$/kg) from HCFCs

Bracket	Servicing	Domestic Ref	ICR	Stationary A/C	MAC	Foam XPS	Foam PUR	Aerosol	Fire Suppression	Solvents
Bracket A	\$4.80	\$9.00	\$9.50	\$8.00	\$7.00	\$4.75	\$4.75	\$5.00	\$5.00	\$20.00
Bracket B, C, D	\$4.80	\$11.00	\$12.00	\$9.50	\$8.50	\$5.00	\$5.00	\$5.00	\$5.00	\$20.00

- Servicing sector cost-effectiveness factor
 - Non-LVC countries: US\$ 4.80/kg
 - LVC countries : Two methodologies were used to estimate costs for bracket E countries (discussed later)

Step 5: Calculation Results

- The Table below provides indicative figures for the **cost of the HFC Phasedown for all countries** for the Consumption Sector to 80% of baseline (Group 1 countries) and 85% of baseline (Group 2 countries):
 - Includes deduction for exports, foreign/multinational ownership of enterprises & cut-off date , and adjusted servicing sector for bracket E (Annex 7).
- NOTE: Last column does not represent sector cost-effectiveness factors.

Unit	MMTCO ₂ eq	% of Volume	(US Dollars \$)	% of Funding	\$/mtCO ₂ eq
GRAND TOTAL	1,218	100%	\$ 4,122,000,210	100%	\$ 3.38
Bracket A	680	56%	\$ 2,201,807,759	53%	\$ 3.24
Bracket B	106	9%	\$ 356,110,478	9%	\$ 3.37
Bracket B Group 2	133	11%	\$ 456,142,528	11%	\$ 3.42
Bracket C	136	11%	\$ 456,394,268	11%	\$ 3.37
Bracket C Group 2	45	4%	\$ 152,773,626	4%	\$ 3.43
Bracket D	69	6%	\$ 199,318,163	5%	\$ 2.87
Bracket D Group 2	21	2%	\$ 58,157,388	1%	\$ 2.83
Bracket E	29	2%	\$ 241,296,000	6%	\$ 8.38

Calculation results for the 2021-2023 Triennium (Planned and Estimated KIPs)

- The Table below provides indicative figures (US\$) for the RTF estimated **total cost of an HFC Phase-down for all countries** for the Consumption Sector to 80% (Group 1 countries) and 85% (Group 2 countries) **for the 2021-2023 Triennium:**

- Includes deduction for exports, foreign/multinational ownership of enterprises & cutoff date,
- Includes adjusted servicing sector cost-effectiveness factor for bracket E

	2021	2022	2023	Total
Estimated %	Group 1: 1.25% Group 2: 0%	Group 1: 1.25% Group 2: 0%	Group 1: 1.25% Group 2: 0%	Group 1: 3.75% Group 2: 0%
Estimated Tonnage	18 MMTCO ₂ eq	18 MMTCO ₂ eq	18 MMTCO ₂ eq	55 MMTCO ₂ eq
Estimated Project Costs	Group 1: \$50 M Group 2: \$0	Group 1: \$50 M Group 2: \$0	Group 1: \$50 M Group 2: \$0	Group 1: \$149 M Group 2: \$0
Estimated Support Costs @9.6%	Group 1: \$5 M Group 2: \$0	Group 1: \$5 M Group 2: \$0	Group 1: \$5 M Group 2: \$0	Group 1: \$14 M Group 2: \$0
Estimated Total Costs	Group 1: \$55 M Group 2: \$0	Group 1: \$55 M Group 2: \$0	Group 1: \$55 M Group 2: \$0	Group 1: \$164 M Group 2: \$0
Planned KIPs	Group 1: \$26 M			Group 1: \$190 M Group 2: \$0

RTF Estimated Funding for Project Preparation

RTF estimated the total funding for project preparation, based on the funding levels agreed at ExCom-87 for the preparation of an overarching strategy for stage I of the KIPs, considering:

- Adjusted Consolidate BP of the MLF for 2021-2023;
- Countries that ratified;
- Countries that ratified and those that submitted to the MLFS a letter of intent to ratify;
- All countries

Estimated Project Preparation Funding (US\$)				
2021-2023 Triennium	Business Planning	RATIFIED	RATIFIED + LETTERS	ALL COUNTRIES
HFC Prep Costs	\$ 9,721,000	\$ 14,993,000	\$ 25,438,000	\$ 25,931,000

Stand-Alone Investment Projects

- In 2017 and 2018, a total of US\$ 14.4 million, including support costs, was approved in 9 countries, for 10 investment projects for the conversion from HFCs
- The RTF estimated US\$ 14 million for a limited number of stand-alone projects, for the 2021-2023 triennium to consider under-represented regions and sectors, prioritizing stationary air conditioning, commercial refrigeration and mobile air conditioning sectors (decision 84/53)
- The US\$ 14 million estimated figure in this Report was deducted from the funds calculated for KIPs to avoid double counting

HFC Ratification Scenarios

BAU

- Based on “Adjusted Consolidated BP of the MLF for 2021-2023”

Scenario 1: Ratified

- Only countries that have ratified the Kigali Amendment (84 A5 Parties as of 17 June 2021)

Scenario 2: Ratified + Letters of Intent

- Countries that have ratified or submitted a letter of intent to ratify (142 A5 Parties as of 17 June 2021)

Scenario 3: All Countries

- All 144 A5 parties ratify the Kigali Amendment by 2023

Enabling Activities

RTF considerations

- a) Five A5 parties that **ratified and/or sent letters of intent to ratify** but did not get funding, could still apply for funding in the 2021-2023 triennium.
- b) Five A5 parties that **have NOT ratified nor sent letters of intent**, may ratify and/or send letters of intent, and therefore, can apply for funding in the 2021-2023 triennium.

The RTF estimated a nominal amount for Scenarios 1, 2, and 3 in the next triennium ranging from **US\$ 0.5 million to US\$ 2.9 million**.

Situation of VLVC countries

In response to informal consultations held, RTF has included one-time supplementary funding of **US\$ 1 million to 21 VLVC countries** to enable stakeholder consultation, matching same level of funding received by LVC countries.

**Total for Enabling Activities and Supplementary Assistance to VLVC countries:
US\$ 0.5 to 3.9 million**

Early Activities to Avoid HFC Growth

RTF looked at ExCom funding precedents to tackle this request, as follows:

1. Accelerating conversion projects/ sector plans in high-growth sectors

Considering that a total of US\$ 48.2 million (including support costs) was approved for 33 investment projects, for 18 A5 parties, 2 years after the accelerated HCFC phaseout was agreed upon in 2007, the RTF,

- Estimated **US\$ 0-US \$ 50 million** as a range for different scenarios when suggesting advancing/ accelerating project submission in sectors with high growth of high-GWP HFCs used in manufacturing conversion.

2. Fostering Market Transformation at End-User- Potential Funding Window

- RTF looked at past experience in MLF funding window in the Chillers sector. It allowed for innovative programmes and co-funding partnerships. A funding window of US\$ 15.2 million was established by ExCom in 2005 for CFC-chillers replacement.
- The RTF estimated a range of **US\$ 0-US\$ 15 million** as a similar example of a potential funding window levels to be considered in the 2021-2023.



Special Needs of LVC and VLVC Countries in Bracket E

Considerations and Inputs Received

- **Informal Consultations**

There was an identified need to develop sustainable infrastructure to maintain high-quality servicing in an evolving work environment.

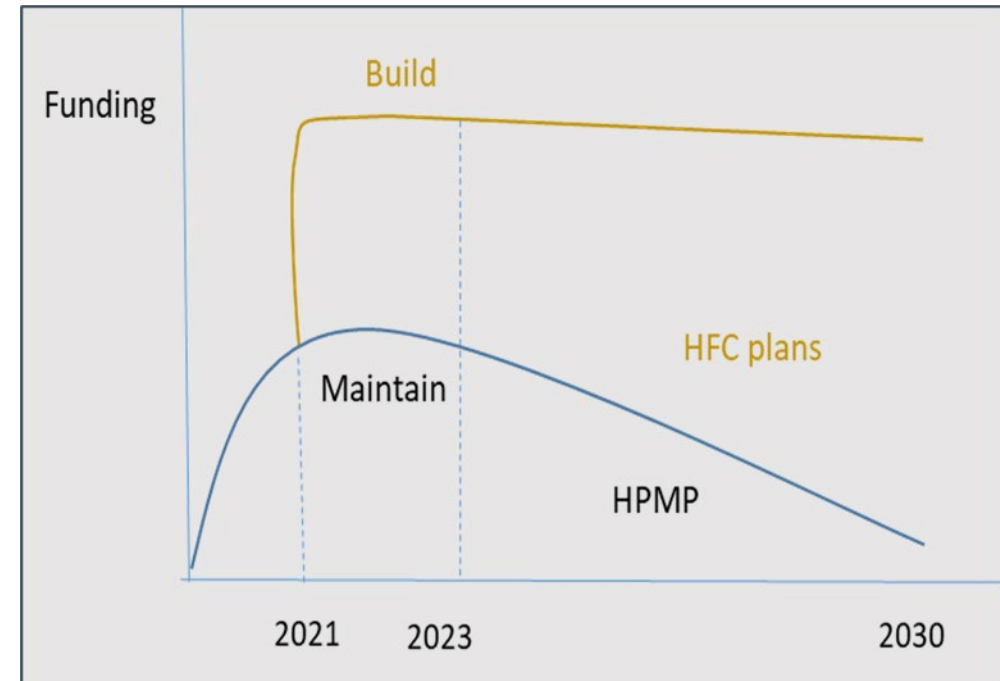
- **Lessons Learnt from HPMP Implementation**

- **Challenges:**

- New Technology
- Policy and Market related activities
- Training/Awareness
- Strategy for Disposal/ Destruction
- New sectors

Special Needs of LVC and VLVC Countries in Bracket E, cont'd

- In order to maintain the stability of the infrastructure funding the additional HFC phasedown funding would need to build on the remaining portion of HPMP funds.
- LVC countries need to maintain and build on best practices in all areas:
 - Supply chain management;
 - Reporting, project monitoring;
 - Certification and standards;
 - Training; and
 - Integrating energy and climate programmes, such as, being able to add a low-GWP requirement into energy-efficiency labelling programmes



For LVC countries, the RTF estimated an additional US\$ 63.7 million in this triennium based on Scenarios 2 and 3, and an additional US\$ 39.3 million (including support cost) based on Scenario 1, as detailed in Annex 7

Estimated Funding Requirement Summary* – HFC Consumption Sector (US\$)

2021-2023 Triennium	BAU / Business Planning	SCENARIO 1: RATIFIED	SCENARIO 2: RATIFIED + LETTERS OF INTENT	SCENARIO 3: ALL COUNTRIES
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

*Including support costs

Funding Requirements for HFC Production Sector and HFC-23 Mitigation

- 6 Parties produce HCFC-22 and HFC-23 as by-products; 4 Parties ratified the Kigali Amendment by June 17, 2021.
- Argentina and Mexico had submitted their project proposals to ExCom.
- The HCFC-22 production facilities in the DPR Korea and the BR Venezuela have not built destruction facilities.
- The RTF estimated no funding requirement in this triennium for KPPMPs.
- China and India have their own country commitments to control emissions of HFC-23, therefore their costs for HFC-23 mitigation are not included in the RTF report.
- Funding for HFC Production and HFC-23 mitigation for the **2021-2023 triennium** includes:
 - HFC production sector preparation costs;
 - HFC-23 mitigation preparation costs;
 - Project approved in principle – Argentina;
 - Project approved and agreed – Mexico.

Estimated Funding Requirements Summary – HFC Production Sector and HFC-23 mitigation (US\$)

2021-2023 Triennium	LOW END	HIGH END
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

Estimated Funding Requirement for Institutional Strengthening & Standard Activities (US\$)

Institutional Strengthening

- **Low-end (BAU)** considers levels of funding, as in the Adjusted Consolidated BP of the MLF for 2021-2023 (**US\$ 35.9 million**).
- **High-end** considers **100% increase** from BAU (**US\$ 71.7 million**).

Standard Activities

- MLFS and ExCom, CAP, and Core Unit estimated funding requirements were taken from the Adjusted Consolidated BP of the MLF for 2021-2023.

2021-2023 Triennium	LOW END	HIGH END
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

Overall Funding Estimate for 2021-2023 Triennium

Estimated Funding Requirement Results for the 2021-2023 Triennium (US\$)

September 2021

2021-2023 TRIENNIUM	LOW END WITH HFC BAU	LOW END WITH HFC SCENARIO 1	LOW END WITH HFC SCENARIO 2	HIGH END WITH HFC SCENARIO 3
SUBTOTAL - HCFC Activities	\$ 267,862,000	\$ 267,862,000	\$ 267,862,000	\$ 267,862,000
SUBTOTAL - HFC Activities	\$ 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

May 2020

2021-2023 TRIENNIUM	LOW END WITH HFC BAU	LOW END WITH HFC SCENARIO 1	LOW END WITH HFC SCENARIO 2	HIGH END WITH HFC SCENARIO 3
SUBTOTAL - HCFC Activities	\$ 249,203,000	\$ 249,203,000	\$ 249,203,000	\$ 367,548,000
SUBTOTAL - HFC Activities	\$ 16,144,000	\$ 64,600,000	\$ 288,400,000	\$ 321,000,000
SUBTOTAL - IS & Standard Activities	\$ 111,350,000	\$ 111,350,000	\$ 111,350,000	\$ 120,315,000
GRAND TOTAL	\$ 376,697,000	\$ 425,153,000	\$ 648,953,000	\$ 808,863,000

Estimated Funding Requirement Results for the 2021-2023 Triennium, cont'd

- RTF updated estimated funding requirement for the 2021-2023 triennium is **US\$ 417.5-779.6 million**.
 - May 2020 Report estimated US\$ 376.7- 808.9 million.
- **Narrower range in funding estimate due mainly to:**
 - Change in **ratification** scenarios:
 - As of 17 June 2021: 84 A5 parties ratified (including largest country in Group 1); 142 letters of intent
 - As of 12 March 2020: 62 A5 parties ratified; 139 letters of intent
 - Planned and approved projects in the **Adjusted Consolidated BP for the MLF 2021-2023** triennium, including PRP for KIPs
 - Small changes for HCFC-related activities, IS and Standard Activities as per MLFS information
 - **HFC production sector and HFC-23 mitigation projects** agreed or approved in principle at ExCom



Future Triennia Funding Estimates

Future Triennia MLF Replenishment Funding Estimates

Triennia	Estimated Funding Range (US\$)
2024-2026	\$ 759 – 811 million
2027-2029	\$ 803 – 842 million

Thank you!

Estimated Funding Requirement Results for the 2021-2023 Triennium (US\$)

2021-2023 TRIENNIUM	LOW END WITH HFC BAU	LOW END WITH HFC SCENARIO 1	LOW END WITH HFC SCENARIO 2	HIGH END WITH HFC SCENARIO 3
SUBTOTAL - HCFC Activities	\$ 267,862,000	\$ 267,862,000	\$ 267,862,000	\$ 267,862,000
SUBTOTAL - HFC Activities	\$ 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