EIA Briefing to the 94th Meeting of the Executive Committee of the Multilateral Fund

27-31 May 2024

Introduction

As Executive Committee (ExCom) members come together for the 94th Meeting of the Executive Committee (ExCom94) to the Multilateral Fund (MLF), the need to take action to reduce greenhouse gas (GHG) emissions could not be starker. Last year, 2023, was the hottest ever recorded and the world's top climate scientists expect global heating to blast past 1.5°C, bringing with it famine, conflict and mass migration driven by far more intensive heatwaves, wildfires and storms.[1] The Montreal Protocol is uniquely positioned to secure swift reductions of super GHGs under the HCFC phase-out and HFC phase-down, starting this decade.

In this context, and against the background of the historic US$ 985 million replenishment of the MLF at the 35th Meeting of the Parties (MOP35), EIA is disappointed by the lack of ambition in the Kigali Implementation Plans (KIPs) submitted for approval by the ExCom. Of the 16 KIPs put forward at this meeting, only one proposes an actual reduction in HFC consumption by 2029, compared against their consumption during the baseline years of 2020-2022. Meanwhile, the majority of KIPs would allow HFC consumption to increase throughout the decade and, in the most extreme case, to almost double the country's average 2020-2022 consumption by 2029 (increase of 70%) – even after the first so-called "reduction" step has been taken. As EIA noted at the 93rd Meeting of the Executive Committee (ExCom93), this is in direct contrast to the necessary "deep, rapid and sustained reductions in global greenhouse gas emissions of 43% by 2030 and 60% by 2035 relative to the 2019 level," recently endorsed at the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC) in Dubai.[2]

Moreover, the growing lack of transparency in the dealings of the ExCom is very concerning. Observers are increasingly excluded from proceedings as members opt to conduct discussions in closed "small groups", which also prejudices the full involvement of the smaller delegations attending the meeting, usually from A5 Parties. We further note, with regret, that observers have been excluded entirely from the half-day session on strategic approaches to Kigali Amendment implementation, despite the informal nature of the session.[3] EIA urges the ExCom to ensure the full and proper involvement of observers at its meetings, noting the important role that civil society has played throughout the long and successful history of the Montreal Protocol.

Agenda Item 5: Country Programme Data

Doc 94/5: Country programme data and prospects for compliance

A review of the country programme (CP) data reveals significant opportunities to leapfrog high-GWP HFCs under the remaining HCFC Phase-Out Management Plan (HPMP) stages yet to be approved or submitted for approval.

As of its 93rd meeting, ExCom has approved HPMPs to phase-out 77.8% of the starting point for aggregate reduction in HCFC consumption. However, a remaining 7,251.4 ODP tonnes of HCFC consumption is yet to be approved for phase-out, 91.7% of which (6,648.7 ODP tonnes) is HCFC-

22. At present, over 50 countries, including some of the largest consumers such as China, Saudi Arabia and Brazil, still have 20% or more of their HCFC consumption remaining unaddressed.

As the final stage HPMPs for these 50+ countries are drafted and put forward, it is crucial that countries do not pursue transition pathways that increase the consumption of HFCs with high Global Warming Potential (GWP), such as HFC-134a, R-404A, R-410A or R-507A, which the latest CP data shows still dominate total A5 HFC consumption in both metric tonnes and CO_2-equivalence (CO_2-eq).

The CP data also highlights the ongoing use of HFC-23 by a small number of A5 countries in refrigeration servicing, solvents and other sectors. Given the extremely high GWP of HFC-23 (14,800), the availability of alternative technologies, and the significant emissions associated with production processes and unexplained sources, EIA urges all Parties to phase out HFC-23 use as a priority.

Agenda Item 7(c): 2024 Consolidated Project Completion Report

Doc 94/11: 2024 consolidated project completion report (part I)

The consolidated project completion report (PCR) covers nine PCRs for multi-year agreement projects, all of which related to HPMPs as well as three individual PCRs, comprising one investment project and two verification reports. Following review, EIA wishes to highlight several key lessons learned to inform future HPMPs and KIPs.

Project implementation

Delays to project implementation were reported across many of the PCRs addressed in the consolidated report and attributed to a wide variety of causes and circumstances. Some of the most prevalent delays reported in the context of HPMPs include: challenges with implementing newly adopted ODS legislation (often requiring changes to national licensing systems and additional reviews by officials); supplier delays related to new facility construction and new systems testing; technicians being resistant to attending training sessions; and external factors including the second wave of the COVID-19 pandemic and natural disasters.

Another significant delay cited across several PCRs was the limited availability of hydrofluoroolefins (HFOs). EIA calls particular attention to this, noting that the uptake of HFOs and blends containing them will face ever greater challenges in the future due to restrictions on per- and polyfluorinated substances (PFAS) globally. Many HFOs (and HFCs) are defined as PFAS while others break down into trifluoroacetic acid (TFA), another PFAS, in the atmosphere. Due to human and environmental health impacts, many countries and regions are developing legislation to restrict PFAS, including HFOs. As our understanding of the harmful impacts of these substances grows, and policy restrictions increase, HFO availability and use will be further impacted. ExCom should consider a "do no harm" PFAS-avoidance strategy to prevent further damaging impacts from HFOs and HFCs that are also PFAS.

In terms of lessons learned, EIA emphasises that stakeholder engagement and collaboration between implementing agencies, technical experts, government and the private sector, are all essential to reducing implementation delays in future projects. A highlighted example is the joint border dialogues fostered to strengthen cooperation between neighbouring countries. Implementing agencies address these delays through visiting project sites to meet with suppliers and further explain the scope of the project, as well as to emphasise the usefulness of the training. It takes continued communication with stakeholders to ensure project

implementation and EIA strongly encourages the continued collaboration between neighbouring countries as this can help prevent the growth of illegal trade across borders.

Alternative technologies and capacity building

The consolidated PCR also drew out some of the key challenges faced in encouraging adoption of low-GWP alternative technologies during HPMP implementation. One agency reported that a lack of knowledge and local expertise was a significant obstacle, while another suggested that regulations supporting adoption of new technologies should be in place before they are introduced into the market.

Noting these challenges, EIA seconds the advice set out in the consolidated PCR, recommending that workshops can be particularly useful tools for raising awareness about new technologies, especially when targeting end-users with high refrigerant consumption. Engaging with technicians over the longer term is also an important lesson learned from past project implementation and, on this point, EIA is particularly supportive of efforts that combine technology transfers with capacity-building activities. We note that it is very important for technicians to receive first-hand experience and practical training with new technologies and that this is far more likely to improve their understanding of why refrigerant choice matters, ultimately facilitating a faster adoption and acceptance of new technologies.

On the specific topic of capacity building, the consolidated PCR also underlines the need for targeted training programmes for customs and law enforcement agencies. These should cover relevant policy changes at both the local and international level and should be updated in future stages of HPMPs or KIPs, for example.

Policy and regulatory framework

The consolidated PCR also highlights effective policy and regulatory actions to support the HCFC phase-out. These include: (i) using the HPMPs to facilitate continuous discussion among stakeholders; (ii) undertaking awareness-raising activities on quota and licensing systems; and (iii) implementing effective policy and regulatory frameworks, in particular the significance of bans on the use of ODS. Moreover, strong collaboration with national stakeholders such as environmental agencies and technical experts was identified as important for successful implementation. Specific topics to consider in collaboration with stakeholders were identified in the consolidated PCR, including: (i) detailed market research of end users and their willingness to participate in demonstration projects; (ii) targeted awareness and advocacy campaigns for end users to increase interest; and (iii) flexible approaches to co-financing.

Agenda Item 9: Project Proposals

Maintaining and enhancing energy efficiency

Six projects for maintaining and/or enhancing energy efficiency have been submitted to the 94th meeting. Four of these, submitted by Cameroon, El Salvador, Sri Lanka, and Tunisia, are recommended for individual consideration, while two, submitted by Cambodia and Cuba, are recommended for blanket approval. The Cambodia and Cameroon proposals address energy efficiency labelling and minimum energy performance standards (MEPS) for refrigeration and air-conditioning (RAC) equipment, and the Cuba, Sri Lanka, and El Salvador proposals all concern demonstration projects using hydrocarbon-based technologies. Tunisia's energy efficiency pilot project proposes both to develop MEPS in the country and demonstrate R-290-based equipment.

In Cambodia, where MEPS and energy efficiency labelling have already been developed, the proposed project is intended to finalise the system as it applies to RAC equipment, and to build awareness of it before it enters into force. EIA appreciates the plan to include refrigerant information in the labelling system and supports the proposed activities to raise stakeholder and public awareness about the impact of ODS and high-GWP refrigerant emissions. In Cameroon and Tunisia, where neither MEPS nor energy efficiency labelling systems have yet been established, the proposed projects intended to support their development. EIA supports these proposals and encourages the ExCom to approve them; however, we suggest that significant consideration be given to designing MEPS and energy efficiency labelling systems that will be as effective as possible in encouraging stakeholders and the public to leapfrog "lower-GWP" HFCs in favour of energy-efficient, natural refrigerant-based technologies.

Turning to the demonstration projects, the promotion of energy-efficient hydrocarbon refrigerants is a consistent and central aim. Cuba proposes to promote market acceptance of R-290 and CO_2 cold room technologies in the country's commercial refrigeration subsector through technology demonstrations, and to use the information collected from these projects to further develop its MEPS. Sri Lanka and Tunisia's pilot projects similarly intend to showcase the energy efficiency benefits of R-290-based equipment, proposing to replace split AC units in selected buildings. Sri Lanka's proposal would also see 30 condensing units in small retail and convenience stores replaced with R-290-based equipment. El Salvador, meanwhile, would install ten R-290-based cold rooms in public hospitals, allowing both for a comparative energy performance analysis to be conducted, and for ten technicians to be trained in installing and maintaining the equipment. EIA commends each of these proposals and agrees with the Secretariat's assessment that they will generate positive impacts for environmental sustainability by simultaneously reducing energy usage and promoting low-GWP, HFC-free, non-PFAS technologies.

Control and phase-out of HFC-23 emissions in production of HCFC-22

UNIDO has submitted a request for $1,370,288 for the third tranche of a project to control and phase-out of HFC-23 emissions in the production of HCFC-22 at Quimobásicos, Mexico. The most recent verification report confirms that a total of 4,427.72 metric tonnes (mt) of HCFC-22 were produced in 2023 (for both feedstock and controlled uses), with 65.344 mt of HFC-23 by-product generated and 0.0043 mt of HFC-23 by-product emitted. The requested funds are primarily to facilitate the continued destruction of HFC-23 by-product at Quimobásicos, with total HCFC-22 production anticipated to be 4,734 mt in 2024, which would generate 66.271 mt of HCF-23 by-product to be subsequently destroyed.

EIA notes the Secretariat's observation that Quimobásicos' low by-product generation rate is well below that experienced in many other countries, and that this reflects the excellent controls and operations of the enterprise. Therefore, although EIA believes that the feedstock exemption under the Montreal Protocol is a loophole which should be closed, we acknowledge the efforts made at Quimobásicos to both meet the Kigali Amendment's HFC-23 destruction obligations and to minimise by-product generation rates in the first instance. EIA therefore supports the approval of this project, so that best-practice HFC-23 mitigation can continue.

National inventories of bank and plans for collection, transport & disposal

Across the 2024 work programmes set out by the implementing agencies, there are a total of 25 requests to fund the preparation of national inventories of banks of used or unwanted controlled substances, and to develop plans for the collection, transport and disposal of such

substances. The Secretariat has reviewed each of the requests and recommended them all for blanket approval.

The proposed projects involve a range of activities in addition to the preparation of national inventories. These vary by country and include, but are not limited to:

- Assessments of relevant stakeholders, institutions, policies and regulations;
- forecasting the amounts of used or unwanted ODS and HFCs that might require recovery, reclamation, recycling or disposal in the future;
- assessments of the feasibility and costs of existing disposal options (recycling, reclamation, destruction);
- and evaluations of the economic viability of destruction plants.

EIA supports the efforts being made to prepare national inventories of banks, reminding Parties once again that the Scientific Assessment Panel (SAP) has estimated CFC bank recapture and destruction to be "the single most effective ozone depletion and climate change mitigation option" for ODS.[4] When considering plans for the collection, transport and disposal of banks, however, EIA stresses that the overriding priority is to achieve the maximum climate and ozone benefit. We therefore draw attention to the serious concerns and risks associated with funding bank recovery and destruction through the sale of carbon credits, a topic which has received increasing attention at Montreal Protocol meetings in recent years.

These include concerns about adherence to the Vienna Convention on the Protection of the Ozone Layer; concerns about undermining the climate protection legacy of the Montreal Protocol; concerns about subverting national efforts to address emissions from banks; and concerns about privileging private rent-seeking over public benefits. These concerns, which are specific to the Montreal Protocol context, rest on a broader nest of recent and historic carbon trading scandals, as well as a host of accounting, verification, additionality, perverse incentive and other practical challenges. EIA's separate submission to the half-day session outlines these issues and risks in greater detail.

The MLF received its most significant replenishment ever last year, and funding the national inventories is an effective first step to seeing this money brought to bear against the longstanding issue of banks. The ExCom must now ensure sufficient resources are made available for the next step, to safeguard the climate and ozone gains that well-funded, non-profit-driven bank recovery and destruction can achieve.

Kigali Implementation Plans

A total of 16 Stage I KIPs are under consideration at ExCom94. EIA welcomes these submissions, although we note with some disappointment that only one of the submitted KIPs proposes a 2029 target that would see HFC consumption reduced below the average level of consumption during the baseline years of 2020-2022 (see Table 1). EIA commends Montenegro specifically for this proposal, which seeks to reduce the country's consumption to 10% below the 2020-2022 average by 2029 (equivalent to a 19% reduction from the country's total baseline).

Although one KIP, submitted by Sierra Leone, does aim to bring HFC consumption back down to approximately the 2020-2022 average HFC consumption by 2029, the remaining fourteen KIPs submitted to this meeting do not propose any reduction in actual consumption before the end of the decade, and instead outline targets for 2029 that exceed their average consumption reported during the baseline years of 2020-2022.

At future meetings, EIA urges countries to consider how they can reduce their actual HFC consumption ahead of the required limits to ensure they achieve a real reduction in HFC consumption and maximise the climate benefits of the HFC phase-down.

Proposed consumption under Stage I KIPs

As flagged in our briefing to the 93rd ExCom meeting, EIA remains greatly concerned that the current phase-down schedules under the Kigali Amendment are not consistent with the Paris Agreement goal of limiting warming to 1.5°C.[5] Despite this, and the availability of additional funding to incentivise countries targeting reductions ahead of the phase-down schedule, the majority of countries with Stage I KIPs at this meeting are proposing only to limit consumption at the baseline level, before reducing it by 10% from this level in 2029.[i]

In many cases, this would allow considerable growth in HFCs, even after a country's KIP is implemented, and would result in a level of consumption at the conclusion of Stage I that is substantially higher than the country's actual consumption reported during the baseline years (see Table 1 on next page).

As a result of the HCFC component included in the HFC baselines, the available room for a country to grow its HFC consumption without entering non-compliance varies widely. In the 16 KIPs, the proportion of each baseline made up by its HCFC component ranges from as low as 10% in Sierra Leone and Montenegro, to as high as 59% in Burkina Faso. Countries with larger HCFC components have a disproportionate amount of room within their total baselines for their HFC consumption to "grow into," thereby delaying the urgency with which HFC phase-down actions need to be taken.

EIA recognises that some growth in HFC consumption in certain sectors may be unavoidable as countries' final HCFC phase-out stages are implemented, and due to economic growth in the countries. However, alternatives to HFCs are available in most sectors—including domestic and commercial RAC, where proven hydrocarbon and CO_2-based technologies exist—and growth need not, therefore, correlate to substantial increases in climate-damaging HFCs.

To ensure parity between Parties and the enactment of genuine restrictions on HFC growth, EIA firmly believes that KIP consumption limits should relate to a country's actual HFC use and demand. Basing the KIP limits on average HFC consumption in the baseline years (2020-2022), whilst allowing some flexibility to account for reasonable and justified growth, would ensure that all Parties submitting KIPs are equally obliged to limit their HFC growth, and encouraged to take earlier action to avoid and reduce consumption of HFCs.

[i] Baseline level refers to the HFC baseline agreed under the Kigali Amendment, *i.e.*, average consumption for 2020-2022, plus 65% of HCFC baseline (in CO_2-eq).

Table 1: Comparison between average consumption 2020-2022, and proposed HFC consumption in 2029 (CO_2-eq tonnes)

Country	Kigali baseline	Average HFC consumption 2020-2022	Proposed HFC consumption in 2029	% difference between proposed HFC consumption in 2029 and…	
				… Kigali baseline (%)	… average HFC consumption 2020-2022 (%)
Burkina Faso	1,049,523	431,713	735,075	-30%	+70%
Liberia*	197,185	84,888	117,904	-40%	+39%
Eswatini	105,500	68,605	94,950	-10%	+38%
Mozambique	655,255	469,662	589,730	-10%	+26%
Saint Lucia	83,735	60,723	75,362	-10%	+24%
Tunisia	2,367,840	1,526,822	1,803,694	-24%	+18%
Paraguay	1,684,582	1,302,242	1,516,124	-10%	+16%
Sri Lanka	1,170,234	905,289	1,053,211	-10%	+16%
Honduras	1,460,674	1,067,364	1,229,146	-16%	+15%
El Salvador*	923,806	731,009	831,425	-10%	+14%
Lao PDR	324,226	274,901	291,803	-10%	+6%
Armenia*	741,515	592,464	667,363	-10%	+13%
The Gambia	271,515	238,062	244,363	-10%	+3%
Seychelles	249,400	220,271	224,460	-10%	+2%
Sierra Leone	350,905	315,180	315,815	-10%	0%
Montenegro	155,854	139,530	125,577	-19%	-10%

Notes:
Countries highlighted blue have proposed plans that reduce or limit consumption ahead of the minimum required for Montreal Protocol compliance.

* Armenia, Liberia and El Salvador have submitted revised Article 7 consumption data for the baseline years, leading to changes in their HFC baseline figures. The revised data are shown here; however, they are still subject to review and approval by the Implementation Committee.

Stage I KIP activities: Strengthening regulatory frameworks

All of the KIPs submitted to this meeting include activities intended to strengthen regulatory or legislative frameworks in order to support the HFC phase-down. Many of these include efforts to make licensing and quota systems more effective, something which EIA firmly supports, noting that strong licensing and quota systems, supported by well-trained and equipped customs officials, are vital to enforcing the phase-down.

In particular, EIA wishes to highlight support for the proposal from Eswatini to evaluate how quota controls on HFC-based equipment could be used to promote the market uptake of low-GWP alternatives. Noting that Liberia too proposes to encourage importers to shift towards specific low-GWP alternative technologies—in this case, second hand R-600a-based refrigerators—EIA suggests quota controls may again prove an effective measure that should be explored. In this vein, EIA urges all Parties to also consider how they can best utilise their quota

and licensing systems to ensure a faster transition away from HFCs towards natural refrigerant alternatives, such as hydrocarbons.

In addition to quota and licensing measures, EIA supports countries proposing to introduce bans or restrictions on HFCs and HFC-based equipment, as these are proven effective HFC reduction strategies. EIA highlights the plans put forward by Laos (a ban on the import of R-410A-based residential AC by 2027 and on the use of HFCs in manufacturing by 2026) and Sierra Leone (a ban on the import of HFC-134a-based refrigeration units by 2025, on the use of any HFCs in fire suppression, foams, aerosols or solvents by 2026, and on the import of R-410A-based split AC units by 2029). Armenia too has a notable series of increasing bans proposed across its Stage I KIP; although, whilst commending this proposed approach, EIA encourages Armenia to consider lowering the GWP thresholds currently outlined for the commercial refrigeration and stationary refrigeration bans (GWP 2,500), given the availability of multiple natural refrigerant options.

Stage I KIP activities: Training and capacity building

Training and capacity-building activities are central to the KIPs submitted to the present meeting. Many of the training and capacity building activities proposed place significant emphasis on preparing technicians in the RAC servicing sector for the transition to natural refrigerants, with activities often intended to work in coordination with the final stages of each country's HPMP. This coordination is important in helping countries to leapfrog to HFC-free alternatives, whilst ensuring that information on safety and best practice reaches all those who will be handling refrigerants, in both the formal and informal sectors.

With regards to training and capacity building, EIA highlights Honduras, El Salvador and Burkina Faso for the significant emphasis placed on strengthening national capacity for the safe and sustainable use of natural refrigerants. In the Honduras and Burkina Faso KIPs, a key priority is training and certification for the handling of low-GWP technologies, particularly R-600a and R-290, to facilitate the faster adoption of these refrigerants in domestic and commercial refrigeration applications. In El Salvador, meanwhile, a full evaluation of the current standards and guidelines on safe handling of flammable, toxic and high-pressure refrigerants will be conducted, with a view to developing new guidelines on the safe use of hydrocarbons, ammonia, CO_2 and other low-GWP refrigerants. The implementation of this guidance will be supported by the development of a specialised CO_2 refrigeration course at one of the country's engineering schools. EIA commends these efforts to develop capacity and support the safe and efficient uptake of HFC-free technologies.

Stage I KIP activities: Demonstration projects

There are several demonstration projects amongst the KIPs which can play an important role in awareness-raising and encouraging the wider uptake of HFC-free technologies.

The Gambia, Seychelles and Sierra Leone have each proposed demonstration projects in the commercial refrigeration sector, showcasing R-290-based technologies. Both the Gambia and Sierra Leone are proposing to install monoblock R-290 refrigeration units at food preservation enterprises, intending to demonstrate the installation, operation, performance, servicing and energy-use of such equipment. The findings from these demonstration projects will be disseminated among end-users and technicians, and in the Gambia, will support training sessions already taking place under the HPMP on the topic of handling flammable refrigerants. In both countries, efforts to transition the commercial refrigeration sector to natural-refrigerant

alternatives are especially positive, as commercial refrigeration is currently Sierra Leone's highest consuming sector, and the Gambia's second highest, in CO_2-eq terms.

Less information has been provided for the Eswatini and Seychelles demonstration projects, which also intend to demonstrate R-290-based equipment in the commercial refrigeration sector, but which are planned for later Stage I tranches. Nonetheless, in the context of the Seychelles proposal, the Secretariat does note that the project would be pursued in addition to tax subsidies aimed at encouraging uptake of the new technology, and that training for technicians would be organised using the demonstration equipment. Noting also that the Seychelles' beneficiary enterprise is expected to cover a major portion of the costs, EIA strongly supports the proposal, and urges the Seychelles to implement the project at as early a date as possible.

Liberia takes a slightly different approach, proposing to develop an incentive scheme for R-290-based air-conditioners that involves a demonstration project-like element. Liberia intends to identify local importers willing to act as R-290 equipment distributors and to procure a shipment of 50 units for them. Ten of these units would be earmarked for a demonstration at a local hospital or similar public building, with data recorded on their use and energy efficiency, ready to be disseminated to stakeholders and used for awareness-raising when the project closes. Given AC units reliant on high-GWP R-410A make up the bulk of air-conditioning appliances in the country, all efforts to accelerate the transition to R-290-based equipment in this sector should be supported.

Stage I KIP activities: Manufacturing conversion projects

Montenegro

Montenegro has only a very small manufacturing sector, comprising of just one RAC manufacturing enterprise which produces HFC-134a-based chest freezers. No conversion for this enterprise has been proposed under the Stage I KIP, as the level of historic consumption has been very low, and early reporting indicates that it will be zero in 2023. EIA would, nonetheless, urge Montenegro to convert this enterprise, allowing the Government to then implement a ban on the import and manufacture of HFC-134a-based refrigeration equipment. In the meantime, EIA seconds the Secretariat's suggestion that, if it transpires that the enterprise has decided to cease production of HFC-134a-based freezers anyway, then a ban on such equipment should be considered.

Sri Lanka

Sri Lanka's manufacturing sector accounts for 8% of the country's total HFC consumption, with the manufacture of R-404A-based industrial refrigeration equipment representing the largest consuming subsector (6.2% of total HFC consumption). Consumption in the domestic refrigeration subsector meanwhile is comparatively low (0.9% of total HFC consumption), as three local manufacturers in this subsector have already converted to R-600a using their own resources. EIA notes with some concern that the KIP preparation survey found a "one-time" use of 9kg of HFC-23 by a local electronics manufacturer, followed by the approval of a licence for 18kg of HFC-23 being issued in 2023. Although Sri Lanka indicates that these consumption levels are "not expected to grow exponentially," EIA urges Sri Lanka to completely phase out the use of HFC-23 as a priority, noting its exceptionally high-GWP and unclear reasons for its ongoing use.

There are no specific activities related to manufacturing proposed in Sri Lanka's KIP, as a separate manufacturing sector plan for the country is under development and will be submitted to the 95th meeting.

Tunisia

Tunisia's manufacturing sector, which produces both residential and commercial RAC equipment, accounts for 14.2% of the country's total HFC consumption in CO_2-eq terms. At present, R-410A is by far the dominant refrigerant, being used extensively in the production of residential AC equipment and making up 96% of the sector's total CO_2-eq consumption. Unfortunately, the increase in the use of R-410A was due in part to previous challenges faced during the implementation of the country's HPMP. Under Stage I of Tunisia's HPMP, it was proposed that four manufacturers of single-split AC units would be converted from HCFC-22 to R-290. Difficulty sourcing the required R-290 components at the time meant the project was ultimately cancelled and the manufacturers instead converted to R-410A using their own funding.

Tunisia's Stage I KIP proposes to address the residential RAC manufacturing sector, to ensure a total phase-out of R-410A and HFC-134a (the second most prevalent refrigerant used in the sector). EIA commends the proposal to convert Sicad Coala's cold-water dispenser production line to R-600a, but it is disappointing that all other proposed conversions would see manufacturers switch to HFC-32, rather than to efficient natural-refrigerant alternatives, such as hydrocarbons. With a GWP of 677 over a 100-year timeframe, and 2,690 over a 20-year timeframe, HFC-32 is simply not a low-GWP refrigerant.[ii] We urge the Government of Tunisia to re-consider the proposed conversions and instead opt for genuinely low-GWP alternatives that will reduce the need of additional conversions in the future. As well as R-600a, R-290 offers a viable and ultra-low GWP alternative with proven application in the residential AC subsector, offering a much more far-sighted and climate-friendly option for the proposed conversion projects.

HCFC Phase-out Management Plans

First tranche funding requests for six Stage II and Stage III HCFC phase-out management plans (HPMPs) have been submitted to ExCom94. EIA welcomes each of these submissions, which will see HCFC consumption phased-out completely in Brazil, the Comoros, Côte d'Ivoire, Gabon, Malaysia, and Saudi Arabia, by 2030.

Although five later tranche requests have also been submitted to the present meeting and recommended for individual consideration, and a further 13 have been recommended for blanket approval, only those proposals relating to first tranche requests (*i.e.* that have not received previous ExCom approval) have been considered in EIA's summary review of HPMPs below.

Brazil, Stage III HPMP

The Government of Brazil is proposing a Stage III HPMP to completely phase-out HCFC consumption by 2030. Brazil is requesting a total of US $36,564,717 to fund this Stage III plan, consisting of US $33,816,456 in project costs and US $2,748,261 in agency support costs, split between UNDP, UNIDO and Germany.

[ii] Based on the Sixth Assessment Report adopted by the Intergovernmental Panel on Climate Change.

Notable in Brazil's proposed plan are a series of demonstration projects in the commercial and industrial AC and refrigeration sectors. Taken together, the proposed demonstration projects account for over half of the total funding requested for the Stage III HPMP, and they will be supported by related training and capacity building activities in the same sectors. Where these projects propose to demonstrate HFC-free technologies (R-290, ammonia and CO_2), EIA is strongly supportive of the plan and agrees with the Secretariat's suggestion that HFC-based equipment (rather than the old HCFC-22 equipment) should be used as the benchmark comparator for performance and energy efficacy, so as to encourage end-users to select low-GWP-based alternatives over HFC-based ones.

EIA urges Brazil to reconsider its proposed use of HFOs in a demonstration project for chillers, however, and instead to opt for available and effective natural-refrigerant alternatives. We also ask the Government of Brazil to reconsider its proposed demonstration project using HFC-32 in VRF AC systems, noting again that HFC-32 has a high GWP of 677 and is not a "low-GWP" refrigerant.

The Comoros, Stage II HPMP

The Government of the Comoros has submitted a Stage II HPMP, which also seeks to completely phase-out HCFC consumption by 2030. For this, the Comoros is requesting a total of US $483,075, consisting of US $427,500 in project costs, plus US $55,575 in agency support costs for UNEP.

The Comoros is proposing to further control its supply of HCFCs by reviewing and updating its existing regulations and drafting new regulations considering new HCFC alternatives. Of particular significance is a proposed ban on the import of all HCFC-based equipment by January 2027, along with training and capacity-building activities proposed to assist customs officers in the enforcement of the new restriction. At the same time, the Government of the Comoros is proposing to develop regulatory standards and protocols on the use of flammable and toxic refrigerants, which will help prepare the country for a transition to HFC-free alternatives under their forthcoming KIP. EIA supports this proposal and shares the Secretariat's view that its efforts to promote low-GWP alternatives and curb refrigerant leaks will reduce emissions and result in climate benefits.

Côte d'Ivoire, Stage II HPMP

The Government of Côte d'Ivoire is also proposing a Stage II HPMP to completely phase-out HCFC consumption by 2030. For this, Côte d'Ivoire is requesting a total of US $3,154,100, consisting of US $2,870,000 in project costs, plus US $284,100 in agency support costs split between UNEP and UNIDO.

This plan relies on a combination of stronger regulatory controls on HCFC imports, including a ban on the import of HCFC-based equipment by January 2027 and on the import of all HCFCs from January 2030, alongside further training of service technicians, supported by awareness and outreach activities to encourage the adoption of alternatives. The training of service technicians would be facilitated by the establishment of three new Centres of Excellence, equipped with recovery machines and electronic leak detectors. EIA strongly supports Côte d'Ivoire's plan.

Gabon, Stage II HPMP

A Stage II HPMP to phase-out HCFC consumption by 2030 has also been proposed by the Government Gabon. For this, Gabon is requesting a total of US $1,014,850, consisting of US $915,000 in project costs, and US $99,850 in support costs split between UNEP and UNIDO.

The Government of Gabon is proposing a similar plan to that put forward by Côte d'Ivoire, intending to achieve its phase-out with stronger regulatory controls on HCFC imports—including a ban on the import of HCFC-based equipment by January 2027, and on the import of all HCFCs by January 2030—supported by additional training and capacity building for technicians, including "intensive training" on the use of hydrocarbons. Gabon is also planning to establish a new Centre of Excellence and a new reclamation centre as part of its proposed plan, which EIA strongly supports.

Malaysia, Stage III HPMP

The Government of Malaysia has submitted a Stage III HPMP intended to complete its phase-out HCFC consumption by 2030. Malaysia is requesting a total of US $17,102,308 to achieve this, consisting of US $15,983,465 in project costs, plus US $1,118,843 in agency support costs for UNDP.

Malaysia's Stage III HPMP will focus on strengthening the country's servicing sector, with an emphasis on recovery and reuse of HCFCs and encouraging improvement of servicing practices. This emphasis is welcome in the context of Malaysia's HCFC-22 consumption, which approximately doubled between 2017 and 2022, at least in part due to demand for servicing of existing HCFC-22 equipment which has passed its optimal lifespan.

As Malaysia's Stage II HPMP only included limited activities related to servicing, Stage III proposes to enhance leakage reduction and refrigerant recovery by providing tools to servicing technicians, carrying out workshops and awareness-raising activities, and increasing the reuse of refrigerants after recovery and reclamation by providing technical assistance to four reclamation centres. In addition, Malaysia's Stage III plan will also introduce new bans on the use of HCFCs and expand the capacity of customs and enforcement agencies to strengthen their control over import and use. EIA supports the proposal by the Government of Malaysia, noting the proposed update of technician training materials should place significant emphasis on HFC-free technologies, to avoid a transition from HCFCs to high-GWP HFCs and encourage the adoption of hydrocarbon and natural refrigerant-based alternatives.

Saudi Arabia, Stage II HPMP

Another Stage II HPMP targeting the complete phase-out HCFC consumption by 2030 has been submitted by the Government of Saudi Arabia. For this, Saudi Arabia is requesting a total of US $5,015,090, consisting of US $22,562,828 in project costs, plus agency support costs of US $1,761,160 split between UNIDO and UNEP.

As with the other plans submitted to this meeting, Stage II of Saudi Arabia's HPMP proposes to build capacity in the servicing sector, in this case focusing on domestic and commercial AC and commercial and industrial refrigeration. The proposal also indicates that the country's regulatory framework would be strengthened through the introduction of a ban on the import and manufacture of HCFC-based equipment and products from January 2025.

Although EIA supports the proposed efforts to provide additional training to servicing technicians, to conduct customs capacity-building workshops, and to develop national

standards for servicing workshops handling flammable refrigerants, we note that the current plan would allow enterprises manufacturing residential and commercial AC equipment to phase out consumption of HCFC-22 by converting to R-410A and R-407C with their own resources. EIA urges Saudi Arabia to implement measures that would avoid any transition to R-410A or R-407C, both of which are very high-GWP refrigerants. We note that the country's Stage II HPMP proposal indicates an intention to "promote the transition to technologies with low GWP in the RAC sector." We do not believe that allowing conversions to R-410A or R-407C supports this goal, and strongly encourage the Government of Saudi Arabia to address this as part of their HPMP.

Agenda Item 10: Paper on the Issue of Alternatives in Polyurethane Foam Manufacturing

Doc 94/58: Paper on the issue of alternatives in polyurethane foam manufacturing

At the 93rd ExCom meeting, the challenge of sourcing low-GWP alternatives to HCFCs in the polyurethane (PU) foam sector, as faced by some A5 countries, was flagged by two members. It was also noted by one member that, regardless of availability, HFOs should not be considered as a sustainable alternative due to their rapid decomposition. Document 94/58 has been produced by the Secretariat in response to these concerns, taking into account information from a wide range of sources including ongoing HPMPs, consultations with implementing agencies, reports of the OEWG and MOP, and the 2022 Foam Technical Options Committee assessment report.

EIA welcomes the paper that the Secretariat has produced and wishes to draw particular attention to the known and ongoing issues associated with HFOs which it addresses. Compared to hydrocarbon- and water-based technologies, which remain the preferred options for large enterprises and SMEs respectively, HFO-based technologies are prohibitively expensive and inaccessible for many A5 countries. As noted by the Secretariat, despite industry claims that HFOs would be fully commercially available by 2015, availability has in fact remained inconsistent over the last decade and prices fluctuate drastically between regions as a result. Because of this, Parties that had designed their PU foam sector plans with HFO technologies in mind have increasingly reverted to high-GWP HFCs for PU foam manufacturing, contributing to damaging climate impacts as a result.

In addition to the challenges posed by insufficient supply and prohibitive costs, the significant health and environmental concerns associated with HFO breakdown products, many of which are known to be PFAS, should be considered. PFAS are persistent, bioaccumulative and toxic, and their mobility in water and air causes contamination to groundwater and drinking water which is difficult and costly to avoid. Moreover, while the direct GWP of HFOs is low, their actual climate impact is certainly not, due to high manufacturing emissions, emissions of feedstocks and byproducts, and potential emissions of HFC-23 as a breakdown product. A recent scientific paper, Perez-Peña et al. (2023) found that as much as 0.31 ppt of HFC-23 could be produced from HFO-1234ze through CF_3CHO photolysis, which could account for as much as 15% of the current growth rate.[6] EIA urges all Parties to treat the use of HFOs with a firm adherence to the precautionary principle in mind.

Hydrocarbon- and water-based technologies, although subject to their own limitations, have now been successfully adopted in many countries. These technologies are ultra-low- or zero-GWP alternatives and have no associated PFAS risk. Recognising the significant challenges that have resulted from the planned conversion to HFOs which have failed to deliver, and the

present and future risk posed by PFAS contamination, EIA urges the ExCom to support the transition to F-gas free alternatives in the PU foam sector wherever possible.

Agenda Item 12: Kigali Amendment Matters

Docs 94/60 & 93/97: Draft guidelines for funding the phase-down of HFCs in A5 countries & paper on starting point for sustained aggregate reductions

Despite being regularly discussed since adoption of the Kigali Amendment, ExCom is still trying to finalise the cost guidelines. Several outstanding issues remain, and EIA urges their prompt resolution to inform KIP development and implementation.

Starting Point

EIA welcomes the proposal from Australia on the starting point for sustained reductions in HFC consumption as a basis for discussions. This proposal, reflected in paragraphs 8 to 15 of ExCom document 93/67, captures the recommendations of the MLF secretariat, and would set out CO_2-eq as the unit of measurement, with mechanisms designed to ensure sustained reductions tailored to servicing and manufacturing sectors and LVC and non-LVC countries. However, EIA questions whether subparagraph (c) necessarily follows from paragraph 18(e) of decision XXVIII/2, which states:

> (e) enterprises that convert from hydrofluorocarbons to lower-GWP hydrofluorocarbons with Multilateral Fund support when no other alternatives are available will be eligible to receive funding from the Multilateral Fund for a subsequent conversion to low-GWP or zero-GWP alternatives if necessary to meet the final hydrofluorocarbon phase-down step.

Australia's proposal to allow these conversions "irrespective of whether the country had sufficient remaining consumption eligible for funding", does not necessarily follow from subparagraph 18(e), which focused on eligibility against the backdrop of limiting funding for second and third conversions as a general policy approach. It is unclear, however, why these second and third conversions should also be deemed eligible for funding if insufficient remaining HFC consumption remains. Contrary to the argument often put forward to justify the use of lower-GWP HFCs technologies, HFC-free alternatives are broadly available and, as such, EIA suggests that the cost guidelines should clearly incentivise one-time conversions to non-controlled substances.

Small- and Medium-Sized Enterprises

EIA welcomes the due diligence of the MLF secretariat in exploring how to characterize small- and medium-sized enterprises (SMEs). It is indeed a challenging issue given the diversity of situations across companies and countries. Generally, EIA supports the recommendations made by the MLF secretariat but would like to see additional funding to SMEs be linked to their uptake of low-GWP, HFC-free, non-PFAS natural-refrigerant technologies.

Climate Bonus

At the 93rd meeting, several non-A5 countries suggested that an extra percentage bonus should be provided to encourage the transition to no or low-GWP alternatives. EIA strongly supports such a bonus, which aligns with the logic of a similar bonus—or premium—made available during the HCFC phase-out, which included funding "of up to a maximum of 25 per cent above

the cost effectiveness threshold will be provided for projects when needed for the introduction of low global warming potential (GWP) alternatives".[7]

EIA makes the following observations:

1. Increased bonus threshold:

   Given the climate emergency, ExCom should consider a bonus of up to 50% above the cost-effectiveness threshold to support the HFC phase-down. Such a clear market incentive would facilitate fast action under the Kigali Amendment and support the leapfrogging of fluorochemicals, which is feasible and, ultimately, cost-effective.

2. Restriction to safe alternatives:

   ExCom should consider restricting the bonus to non-controlled substances that do not harm human health and the environment, namely by making PFAS ineligible for such a bonus. Fluorinated gases are a significant source of PFAS, and the Montreal Protocol should avoid promoting such substances.

Agenda Item 13: Paper on how HCFC Phase-Out and HFC Phase-Down Activities Supported by the Multilateral Fund Might Contribute to Sustainable Cooling

Docs 94/63: Paper on how HCFC phase-out and HFC phase-down activities supported by the Multilateral Fund might contribute to sustainable cooling

In December 2023, the Global Cooling Pledge was launched at COP28 in Dubai. It aims to reduce cooling related emissions by 68% by 2050, significantly increase access to sustainable cooling by 2030, and increase the efficiency of new air conditioners globally by 50%.[8] The emission targets draw on the modelling from the UNEP Cool Coalition report, "Global Cooling Watch 2023, Keeping it Chill: How to meet cooling demands while cutting emissions".[9] EIA urges all ExCom members to join the pledge, which has 70 national signatories to date.

Document 94/63 examines the impact MLF-funded activities have had on achieving sustainable cooling, considering direct and indirect emissions, as well as future trends resulting from cooling needs. Looking at the manufacturing sector, servicing sector, and capacity building activities, EIA provides comments on positive impacts identified in the paper, as well as outstanding issues that are yet to be resolved or addressed.

Manufacturing Sector

A priority area during HPMP implementation was the phase-out of HCFC-141b as a solvent and foam blowing agent, due to its high ODP and the widespread availability of low-GWP alternatives. Notable progress has been made in this regard, with less than 1% of the projects supported by the MLF converting to high-GWP foam blowing agents. In other sectors however, the transition to low-GWP alternatives has not been so universally successful.

Although the ExCom ceased to provide funding for air-conditioning projects to convert to R-410A after the 68th meeting, such conversions were funded until this point. Furthermore, it is believed that most of the manufacturers that did not receive MLF funding have now converted to R-410A, making a full conversion of the sector to low-GWP alternatives even more challenging.

EIA notes that fully converting to low-GWP alternatives in the air-conditioning sector will require sufficient resources, but that this goal should be pursued through countries' KIPs. So far, MLF support for AC conversions to R-290 has been limited to units with a cooling capacity of less than 1 tonne. EIA recommends additional support to facilitate the removal of barriers for larger cooling capacity units and suggests that additional support is needed to increase manufacturing in this sector by developing supporting regulations to encourage market adoption and increase compressor availability.

Turning to the refrigeration manufacturing sector, more progress is also required, particularly for conversion from HCFC-22 and R-404A to low-GWP alternatives. Most manufacturers in this sector still rely on HFCs and, despite previous support for small- and medium-sized enterprise (SME) conversion projects, the Secretariat notes that SMEs in commercial refrigeration still lack the technical and financial capabilities to adopt low-GWP refrigerant technologies. Whilst addressing this challenge should be a key priority in the KIPs of those countries with local refrigeration manufacturing sectors, EIA applauds the efforts of several domestic and commercial stand-alone refrigeration manufacturers that have already completed conversions through MLF-supported HFC investment projects.

Servicing Sector and Capacity building

Throughout the HPMP and KIP development process, EIA has always supported measures to train refrigeration technicians in the containment of controlled substances, to improve installation quality, and to build capacity for the safe handling of flammable and hazardous refrigerants. Technician training on flammable refrigerants remains an important area of investment even in some non-A5 countries and support for service professionals is vital to leapfrog high- and mid-GWP refrigeration technologies and ensure adoption of genuinely low-, or zero-, GWP alternatives. In particular, EIA appreciates the support for training to service CO_2-based equipment in supermarkets and notes that efficient CO_2-based technology is now available and effective in nearly all climates.

One issue of concern raised in the paper which EIA wishes to draw attention to though, is the use of hydrocarbons (HCs) for retrofitting, operating, and/or filling HCFC-22-based equipment, reported in several A5 countries. The paper notes that countries engaged in retrofitting equipment to flammable or toxic refrigerants assume all risks, and that such retrofitting should be done only in accordance with the relevant standards and protocols; however EIA suggests that further support from the MLF for these countries – to acquire new ultra-low equipment intended for use with flammable or toxic refrigerants, and to facilitate training to service it – would remove the associated risk.

Aside from considerations around flammable and toxic refrigerants, EIA commends the MLF's ongoing support for establishing refrigerant recovery, recycling programmes, and reclamation centres. Continued regulatory support, and capacity building addressing the topic, facilitates strong and effective programmes in locations without a history of refrigerant recovery. Nonetheless, we do note that capacity to carry out refrigerant destruction at end-of-life of equipment be further advanced to effectively encourage adoption of ultra-low GWP technology in the future.

Further considerations

Overall, solid progress has been made towards achieving sustainable cooling through activities funded under the MLF: 106 countries have received funding for the preparation of KIPs, 24 have received funding for approved KIPs, and 14 have had HFC phase-down stand-alone investment

projects approved as of the 93rd meeting. Nonetheless, significant potential emissions reductions and cost savings remain to be realised through various interventions in the future.

In the immediate term, actions such as aligning the HPMPs and KIPs for Article 5 countries and integrating KIPs with the relevant components of national cooling action plans (NCAPs), could help to avoid the adoption of high-GWP, HFC-based technologies. EIA supports a sector-level approach, believing that strategies for adopting the safe use of low-GWP flammable refrigerants in one sector can influence manufacturing decisions in other related applications, and so maximise emissions reductions.

There are a number of specific interventions that can support the transition to sustainable cooling as KIPs are developed and rolled out, these include: programmes to accelerate adoption of energy efficient low-GWP refrigerant-based RACHP equipment; end-user support programmes for reducing dependence on HFC-based products; and efficient end-of-life management of equipment using HFCs. Supporting these interventions, innovative funding could also be used to set up Extended Producer Responsibility (EPR) schemes to manage the logistics of disposal and destruction, and to help fund the creation of regional centres that reclaim refrigerants and operate destruction facilities.

In the longer term, direct emissions reductions, achieved through actions such as an accelerated phase-down, and indirect reductions, achieved through measures such as adopting passive cooling and increasing energy efficiency, could reduce the cooling-related GHG emissions of A5 countries from 8.15 billion CO_2-eq tonnes in 2050, to 2.11 billion CO_2-eq tonnes (not including energy grid decarbonisation).[10]

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