EIA Briefing to the 92nd Meeting of the Executive Committee of the Multilateral Fund

29 May – 2 June, 2023

It is now almost seven years since the Parties to the Montreal Protocol adopted the Kigali Amendment to incorporate a global phase-down of hydrofluorocarbons (HFCs). Group 1 Article 5 Parties are facing the first control measure in 2024, and it is therefore urgent that Members of the Executive Committee (ExCom) to the Multilateral Fund (MLF) agree the cost guidelines this year, including the starting point for sustained aggregate reductions, incremental capital and operating costs and elements related to energy efficiency and the refrigeration servicing sector.

The ExCom has 118 funding requests to consider, including two new HCFC Phase-out Management Plans (HPMP) and two Kigali Implementation Plans (KIPs), as well as seven KIP preparation/investment projects, five energy efficiency related projects and 31 renewals of institutional strengthening. Additional activities to maintain energy efficiency in the servicing are also included in one new stage and four tranche requests.

The following briefing outlines EIA's analysis and priority recommendations on these and other issues.

Agenda Item 6: Evaluation

Doc 92/6: Evaluation of regional networks of ozone officers

Regional networks of ozone officers are an important tool that have contributed significantly to the success of the Montreal Protocol. They are a unique discussion forum, which is increasingly important given the broadening range of controls and other issues facing the Parties, including HFCs, energy efficiency, ODS and HFC banks and unexpected emissions of controlled substances.

In EIA's experience attending some of these meetings, the regular presence of implementing agencies, the Ozone Secretariat and Multilateral Fund Secretariat at these meetings is critical and should be continued. We support the recommendation to broaden participation to other relevant stakeholders, including civil society, particularly in the priority areas identified by the ozone officers in Annex III of the report (e.g., waste disposal, illegal trade). EIA also supports the recommendation to promote inter-regional exchanges in these areas, which could be facilitated by remote meetings to avoid excessive travel and costs.

Agenda Item 7: Programme Implementation

Doc 92/9: Projects with specific reporting requirements

Brazil – continued use of high-GWP HFCs.

EIA is concerned at the continued use of high-GWP HFCs in the systems houses Amino, Flexivel, Purcom and U-tech under Stage II of Brazil's HPMP, which is a result of long-term problems with the stability of supply and high price of HFO alternatives. Given that Purcom has been able to introduce low-GWP technologies other than HFOs for all its clients (methyl formate/water based) and other companies are already using these technologies for some of their clients, EIA sees no reason for the companies to wait for HFO technologies to become cost

competitive. In addition to PFAS and other environmental concerns regarding HFOs, this could result in the continued use of high-GWP HFCs for a long time, given that the current price of HFO-1233zd(E), when available, was reported to be between US $17.80-20.80/kg compared to US $10.75-13.80/kg for HFC-365mfc/HFC-227ea.[1]

The phase-out of HCFCs in the PU foam sector has been plagued by problems associated with the availability and cost of HFOs, resulting in the uptake of high-GWP HFCs despite Decision 19/6 and the additional funding agreed by the ExCom to incentivise climate-friendly alternatives. EIA urges the Parties to focus on the adoption of non-patented non-fluorinated alternatives to HCFCs in their phase-out strategies.

Saudi Arabia – Demonstration project on low-GWP refrigerants for the air-conditioning sector in high ambient temperatures (final progress report)
EIA congratulates Saudi Arabia on the successful demonstration of a conversion of an AC manufacturing line from HCFC-22 to R-290, with the production of a mini-split R-290 AC unit with optimum refrigerant charge of 500g suitable for use at high ambient temperature conditions. The unit has an EER of 12.2 (an improvement on the high-GWP base unit) and received the certification necessary for production and entering the market. The enterprise estimates a production capacity of 300,000 unit per year.

Agenda Item 9: Project Proposals

Doc 92/13: Requests for funding additional activities to maintain energy efficiency in the servicing sector for LVCs, submitted as stand-alone projects (decision 89/6)

Five projects (one new HPMP stage for Burkina Faso, and four tranche requests for Honduras, Malawi, Nicaragua and Zimbabwe) include additional activities to maintain energy efficiency in the servicing sector under decision 89/6. The tranche requests are recommended for blanket approval while Burkina Faso's project is recommended for individual consideration as is usual practice for a new stage of the HPMP.

Five additional submissions for activities under decision 89/6 were submitted as stand-alone projects. One (Kyrgyzstan – Doc 92/30) is recommended for blanket approval as the country has completed its HPMP and the submission is therefore in line with decision 91/37(a), however the four remaining proposals (Guyana, Liberia, Namibia and Seychelles) have not been reviewed by the Secretariat as they were not submitted as part of a tranche request.

The proposed measures are aimed at improving coordination and collaboration between stakeholders, authorities (including customs and trade authorities), capacity building on promoting energy efficiency and the use of low-GWP refrigerants in RACHP equipment, outreach awareness activities to the public and consumers / development of work to promote adoption of future MEPs and labelling standards. EIA congratulates these countries for proposing a suite of measures to maintain and enhance energy efficiency and notes that these activities should go hand in hand with the adoption of low- or zero-GWP alternatives.

EIA supports the recommendation of the Secretariat that the ExCom should enable submission of these proposals separately, given that many LVC countries do not have their next tranches until 2025 or 2026, leaving 2-3 years before they can benefit from activities agreed under

[1] Para 130, UNEP/OzL.Pro/ExCom/91/18 14 November 2022. Available here.

decision 89/6(b) when needed for the introduction of alternatives to HCFCs with low- or zero-GWP and for maintaining energy efficiency in the refrigeration servicing sector.

Doc 92/14: Project Preparation for energy efficiency pilot project, India

Germany has requested project preparation funds for a pilot project in one enterprise, Godrej & Boyce Mfg. Co. Ltd., which has been manufacturing air-conditioners using R-290 since 2012. Godrej has a production capacity of around 600,000 AC units each year, 95% of which are based on R-32 with 5% R-290. The project, which would be submitted to the 93rd meeting, aims to develop more energy efficient R-290 compressors and microchannel heat exchangers for the Indian market.

EIA fully supports this request which would improve availability and accessibility of highly efficient R-290 compressors, supporting the production of R-290 units by Godrej and other manufacturers in India. EIA particularly appreciates the commitment by the Government of India that Godrej will convert their production of AC's using R-32 and reduce this by up to 70% by 2028, consistent with the planned KIP for India.

Doc 92/22: HPMP Stage II, Burkina Faso

Burkina Faso is requesting approval for a Stage II HPMP, at a total cost of US $1,290,000 plus agency support costs of US $135,500. This includes US $1,170,000 (plus agency support costs) to achieve a 100 per cent phase-out of HCFCs by 2030, as well as an additional US $120,000 (plus agency support costs) for the introduction of alternatives to HCFCs with low- or zero-GWP and for maintaining energy efficiency in the refrigeration servicing sector in line with decision 89/6.

Activities proposed under the first tranche include training sessions and workshops designed to support customs and enforcement officers and prepare them for a planned 2025 import ban on HCFC-based equipment, a study on the development of regulatory standards around the use of flammable and/or toxic substances in RAC equipment, and technical assistance for two RAC centres of excellence and four training institutes equipping them for training with flammable refrigerants.

Although the proposal includes provisions that can support the transition away fluorinated greenhouse gases, including the study and technical assistance mentioned above, there is little specific detail on efforts to avoid the phase in of HFCs as HCFCs are phased out. EIA supports this proposal, but urges the Government of Burkina Faso to incorporate requirements to ensure the adoption of low-GWP or zero-GWP alternatives into activities under the energy efficiency funding request, as envisaged in Decision XXVIII/2.

Doc 92/29: HPMP Stage III, Indonesia

The Government of Indonesia is proposing a Stage III HPMP that will completely phase-out HCFC consumption by 2030. Following a revision on cost agreed with the Secretariat, Indonesia is requesting a total of US $16,048,056 to fund this Stage III, consisting of US $13,240,847, plus agency support costs of US $926,859 for UNDP and US $1,685,000, plus agency support costs of US $195,350 for the Government of Australia.

Notable in the proposal are commitments by the Government of Indonesia to several HCFC-related bans. These include a ban the import, manufacture and installation of HCFC-123-based chillers by 1 January 2026, a ban the import, assembly and manufacture of HCFC-123-based fire suppression and fire protection equipment no later than 1 January 2030, and finally a total ban on the import of HCFCs by 1 January 2030 (excepting those allowed for a servicing tail between 2030 and 2040, where required, consistent with the Montreal Protocol). EIA supports these bans

and agrees with the Secretariat's comment that, combined with measures to enable reclamation in the country, and the professionalization of the servicing sector, they will help ensure the long-term sustainability of the phase-out.

Doc 92/23: KIP Stage I, Cameroon

Cameroon is requesting first stage funding of their KIP, at a cost of $1,211,500 plus agency support costs of US $84,805. The implementation of Stage I aims to achieve a 10% reduction in HFC baseline consumption by 1 January 2029, and a 24 per cent reduction in the overall level of HFC consumption below the HFC baseline by 1 January 2030, which is ahead of the Kigali schedule for Group 1 countries. Activities include technical assistance to existing RAC associations to increase participation in training and capacity building activities, training of refrigeration technicians in the safe handling of low-GWP refrigerants and flammable refrigerants, development of good practices for the MAC sector, and refrigerant management and regulatory framework components. In addition, the proposal includes early activities to limit the growth of HFCs, such as by supporting the adoption of better servicing practices to reduce HFC wastage, as well as introducing policies such as end-user incentive programmes to encourage uptake of low-GWP alternatives.

EIA notes that even in an unconstrained scenario of HFC consumption forecast at 6% growth rate, Cameroon would not face potential non-compliance with the HFC phase-down until 2029, even using the assumption that HCFC-22 consumed in commercial refrigeration and air-conditioning are fully substituted by the highest-GWP alternatives, namely R-404A and R410A respectively. This is due to the significant contribution of the HCFC component of the baseline which adds an additional 47% of the HFC component in CO_2e. In light of this, EIA appreciates that Cameroon is proposing a number of early actions to maintain HFC consumption more than 20% below the Montreal Protocol control limits from the first year of the stage.

EIA urges Cameroon to give serious consideration of activities to reduce the use of HFC-134a during the implementation of Stage 1, given it represents 52% of total HFC consumption in CO_2-equivalent terms. It is difficult to understand the slow introduction of R-600a refrigerators, given they dominate the estimated 200 million new domestic refrigerators and freezers being sold each year.[2]

EIA welcomes the continued engagement with national stakeholders regarding an eventual prohibition on the installation, import and sale of HFC-134a-based equipment in domestic refrigeration, but urges the Government of Cameroon to agree on specific dates for such actions as soon as possible in order to send a clear signal about their intention to commit to this course.

Doc 92/23: KIP Stage I, Costa Rica

The Government of Costa Rica is proposing a Stage I KIP that aims to meet the freeze in 2024, and subsequently achieve the target 10 per cent reduction in HFC baseline consumption by 1 January 2029. In total, Costa Rica's Stage I KIP is costed at US $3,491,704, plus agency support costs of US $244,419. There are four strategic components to the proposal: reducing demand for high-GWP HFCS; strengthening national capacities in the safe use of low-GWP refrigerants and new RAC technologies; reducing HFC emissions and improving refrigerant life-cycle management; and promoting the use of natural refrigerants through policy, economic incentives, and new regulatory standards.

[2] RTOC 2022 Assessment Report, available here.

EIA supports Costa Rica's KIP proposal and welcomes the emphasis placed on transitioning to natural refrigerants in Costa Rica's KIP. Furthermore, EIA commends the uptake which has already been noted in the domestic refrigeration sector, where equipment using R-600a now makes up 27% of the country's inventory. Seconding the Secretariat however, EIA notes with concern the reported use of HFCs by RAC technicians as drop-in replacements for natural refrigerants. As well undermining the benefits of installing natural refrigerant-based equipment, this practice compounds noted issues around accurately determining the HFC consumption of the country. As such, EIA urges the Government of Costa Rica to address the issue as a priority in their proposed capacity building and training activities.

Doc 92/34: Conversion project, Mexico

Mexico is requesting funding for a proposed project to convert the manufacturing of commercial refrigerators at Friocima from HFC-134a to R-290, at a total revised cost of US $143,850 (plus agency support costs). Friocima is the only Mexican enterprise in the self-contained commercial refrigeration subsector that is yet to be converted to R-290, and it has been calculated that the project would result in the phase-out of 7,407 CO_2-eq tonnes (5.18 mt) of HFC-134a. Conversion needs to be completed in 2024 to remain in line with the overarching strategy of the KIP for the subsector.

EIA firmly supports the proposed project and recommends that, if it is approved, the Government of Mexico take advantage of the opportunity presented by complete conversion of the subsector to restrict the import and manufacturing of similar equipment during the implementation of Stage I of the KIP. EIA agrees with the Secretariat's comment that following this course of action would help sustain the transition to R-290 and contribute to limiting the increase of HFC-134a banks in this subsector.

Doc 92/20: World Bank's Work Programme for 2023 – Vietnam MAC Demo Project

Document 92/20 contains a request for $32,000 for preparation of a KIP investment project in the MAC sector to address one car manufacturing enterprise (Thaco Auto), for which 2019-2021 consumption data had been provided. The project preparation activities include technical support and research and development to develop more efficient MACs, with a demonstration project which would manufacture one vehicle model equipped with an R-1234yf MAC system.

EIA questions the need for a demonstration project on the use of R-1234yf MAC system given that they already exist in over 200 million cars worldwide.[3] Moreover, there are several less damaging alternative refrigerants that are also more efficient than R-1234yf that should be considered.

For example, the efficiency of HFC-152a (GWP <150) is better than 1234yf in high ambient temperature, the price is lower, there are no TFA implications and no patents. Studies show that secondary loop systems also reduce leakage of refrigerant by half.[4] Recent demonstrations have confirmed that in hot climates, additional fuel savings can be achieved with secondary loop MACs due to its cold storage capacity.

[3] Taddonio, K.N. Global Number of Vehicles Using HFO-1234yf Refrigerant. Available here.
[4] Papasava, S. & Andersen, S.O. (2011). Life-cycle climate performance metric for mobile air conditioning technology choice. Available here.

Researchers at Shanghai Jiao Tong University and Shanghai Automotive Industry Corporation Motor are exploring R-290 as heat pump refrigerant in a secondary loop application and have found that cooling capacity is 9.6% higher than HFC-134a system with similar cooling COPs.[5]

Currently around 400,000 cars in Europe use CO_2 as a MAC refrigerant, with 5.5 million anticipated to be using this technology by 2028.[6] Sanden have stated that their CO_2 system increases driving range up to 50% in electric vehicles in winter conditions.[7]

Given increasing concern over emissions of R-1234yf, which is a PFAS and also degrades to produce a large proportion of TFA, another PFAS, EIA strongly objects to the funding of projects which will increase emissions of PFAS chemicals.

Agenda Item 11: Kigali Amendment matters

Docs 92/45 and 92/46: Cost Guidelines including the Starting Point

In paragraph 10 of decision XXVIII/2 the Parties requested the Executive Committee to develop, within two years of the adoption of the Amendment, guidelines for financing the phase-down of HFC consumption and production, including cost-effectiveness thresholds. These guidelines are overdue and with the freeze set to begin in 2024 for Group I A5 Parties, there is an urgency for ExCom to complete its work.

The key remaining issues to resolve are:

- The starting point for sustained aggregate reductions in HFC consumption;
- Cost-effectiveness (CE) thresholds for stationary AC and commercial refrigeration;
- Incremental Operating Costs (IOCs) and their duration;
- Energy efficiency (under a separate agenda item); and
- Disposal.

At its 89th meeting, ExCom established a contact group to progress on the matter, holding focussed discussions on cost-effectiveness thresholds, disposal-related issues and the starting point for HFC phase-down. Although some progress was achieved at the 90th and 91st meetings in relation to cost-effectiveness thresholds for some manufacturing sectors and on disposal-related issues, the guidelines remain to be finalised.

Much of the discussion to date has focused on the starting point for sustained aggregate reductions in HFC consumption. While it is admittedly a complicated topic, with many issues and implications, document 92/46 provides a possible mechanism well worth consideration that takes into account the replacement of high-GWP HFCs by lower-GWP HFC alternatives while also addressing the fundamental question of whether the measurement used to establish the national starting point should be in metric tonnes or carbon dioxide-equivalent tonnes (tCO_2-eq). With regards to measurement, while recognising some benefits to the mt approach, the analysis favours the use of tCO_2-eq, highlighting the flexibility that it offers to Article 5 countries and suggesting the starting point as the HFC baseline for consumption, possibly with certain reductions. It does this by accounting for total HFC consumption in both mt and tCO_2-eq when calculating agreed cost-effectiveness, relying on conversion between US $/kg (used to determine levels of funding) and US $/$tCO_2$-eq (used to calculate cost-effectiveness) to do so. Low volume consuming (LVC) countries and non-low volume consuming (non-LVC) countries

[5] Papsava & Andersen, ibid, p8
[6] Chasserot, M. What's possible with natural alternatives? Presentation to European Parliament, 31 January 2023
[7] Environmental Investigation Agency (2021). *Pathway to Net Zero Cooling Product List*, p23. Available here.

are addressed separately under the possible mechanism with manufacturing consumption separated out from servicing consumption in countries where both exist. Funding would thereafter be determined as follows:

	Servicing Sector (US $/tCO$_2$-eq)	**Manufacturing Sector (US $/tCO$_2$-eq)**
LVC	Funding determined by the table for LVC countries and the target to be met	Funding determined in line with past practice, i.e., eligible incremental costs or, if a cost effectiveness threshold is established, the lower of the product of the enterprise's consumption and the agreed cost-effectiveness threshold or the eligible incremental costs.
Non-LVC	Agreed cost-effectiveness threshold (CE) converted into US $/tCO$_2$-eq based on the country's HFC consumption in the baseline year. Funding = CE X agreed CO$_2$-eq tonnes reduced	

In order to ensure the sustainability of the reductions achieved in the servicing sector and avoid transferring ineligible consumption from the manufacturing sector to the servicing sector, document 92/46 further outlines two possible protections in paragraph 10(d)(i)-(ii).

EIA generally supports this possible mechanism as it aligns with the HFC phase-down in terms of measurement and past practice, which has been on the whole very effective. However, EIA believes that ExCom should consider more squarely how to incentivise the one-time transition to low-GWP and zero-GWP technologies and equipment, in particular those relying on natural refrigerants, rather than encouraging the phase-in of lower-GWP HFC/HFO blends.

EIA does not consider that ExCom should wait until 2029 to choose a starting point as it is not clear that it confers any benefit and could act as a disincentive to countries to move ahead of the Kigali schedule.

Doc 92/47: Operational Framework for Energy efficiency

The Parties to the Montreal Protocol agreed in Kigali to "request the Executive Committee to develop cost guidance associated with maintaining and/or enhancing the energy efficiency of low-GWP or zero-GWP replacement technologies and equipment, when phasing down hydrofluorocarbons". While some progress has been made, the funding model continues to confound the ExCom. EIA strongly favours funding for energy-efficiency projects within the MLF through regular contributions (option 1) to leverage existing processes. EIA also recognises that the provision of additional funds by interested donor countries (option 2) is not mutually exclusive and could further supplement available funding. Nor should it preclude collaboration with and co-financing from other financial institutions.

While energy efficiency is not a compliance obligation, the decision to include energy efficiency was taken by consensus as part of the Kigali Amendment package. To further the issue, EIA recommends the creation of an envelope of funding within the MLF, available to each A5 Party based on consumption or some other metric, for KIP activities related to maintaining and/or enhancing energy efficiency of low-GWP and zero-GWP replacement technologies and equipment. This would allow A5 Parties to access funding for activities identified in ExCom 91/64, building on the findings of the pilot projects, the selection of which would be based on national circumstances in accordance with criteria for project proposals, while also leaving open the option for additional funds by interested donor countries as well as collaboration and co-financing from other financial institutions, such as GEF and GCF.

On funding models for energy-efficiency investment projects, noting that the incremental cost model set out in Article 10 of the Protocol is not applicable, the ExCom could consider cost-effective investments in technology upgrades, which normally would not be funded, related to the energy efficiency of appliances' refrigeration systems. This could be at a level of up to 25% above the refrigerant cost-effectiveness threshold, for example.[8] EIA notes that Decision XXVIII/2 requests the ExCom to develop cost guidance associated with "maintaining and/or enhancing the energy efficiency of low-GWP or zero-GWP replacement technologies and equipment". A generally accepted definition of low-GWP is <150, however EIA recommends that GWP <5 is more applicable, given the climate emergency. Additional funding for efficiency improvements to medium-GWP substances which will shortly become obsolete should not be supported and energy efficiency funding requests should specify the GWP of the alternatives being considered.

Doc 92/49 (& Corr 1): Local installation / assembly sector

Document 92/49 outlines the definition of local installation and assembly subsector, with a view to distinguishing it from the manufacturing and servicing sectors, including the types of equipment and refrigerants used and the challenges faced by the sector in transitioning to low-GWP alternatives. Building on the guidelines for the definition to differentiate it from the commercial refrigeration manufacturing sector adopted at the 31st meeting, the report outlines a wide range of end users, including retailers (supermarkets, minimarkets and butcheries), the agroindustry (flowers, food-freezing warehouses, slaughterhouses, and milk-based products), the pharmaceutical sector and catering (e.g. for the army, schools, hospitals, restaurant chains, food processing plants etc.). A key distinguishing feature is that the systems covered are charged on-site.

The sector is characterised by the use of very high-GWP HFC refrigerants (e.g., R-404A and R507A) but also a large number of commercially proven low-GWP alternatives, including hydrocarbons, ammonia and CO_2.

EIA notes that commercial refrigeration is a very important sector for early HFC reductions, as demonstrated by the two KIPs at this meeting. In Costa Rica, consumption of HFCs in the commercial refrigeration sector amounts to 44% of total HFC consumption on a CO_2e basis (724,136 tCO_2e out of total 1,655,225 tCO2e), making it the largest HFC consumer among the subsectors in terms of CO_2-eq tonnes. Similarly, Cameroon's proposal states that 1,838,782 tCO_2e (58%) out of total consumption of 3,164,815 tCO_2e is used in the commercial refrigeration sector.

While there are a number of challenges in converting to low-GWP alternatives, EIA notes that the local installation and assembly subsector relates to new systems only, and there is therefore an opportunity to use effective policy measures such as restricting the placing on the market of HFC-containing equipment, in order to encourage the uptake of low-GWP alternatives. These measures provide clear market signals with little administrative burden and costs and are critical measures for small- and medium-sized enterprises (SMEs), which otherwise become locked into HFC-based equipment and face high servicing costs or early obsolescence of equipment as the HFC phase-down progresses. EIA therefore encourages early consideration of the assembly sector in KIPs with consideration of supporting policy measures specific to different applications based on technical and economic feasibility, as described in paragraph 23.

[8] See EIA & NRDC (2018). Cool Business: Energy Efficiency & The Multilateral Fund. Briefing to the 81st ExCom meeting, available here.

HFOs: PFAS and GHG emissions from Production

The increasing concern over the negative environmental impacts of HFCs and the fluorochemicals designed to replace them, HFOs, deserves serious consideration by the ExCom. Some HFCs and HFOs are defined as per- and poly-fluoroalkyl substances (PFAS) and/or form trifluoroacetic acid (TFA), another PFAS, when they break down in the atmosphere. Scientists investigating the potential impacts of a transition from HFC-134a to HFC-1234yf predict a 250-fold increase in surface TFA concentrations across Europe.[9]

In February 2023, the European Chemicals Agency (ECHA) published a proposal from Denmark, Germany, the Netherlands, Norway and Sweden to restrict PFAS under REACH, the EU's chemicals regulation. The proposal would restrict the manufacture, use or sale of these 'forever chemicals', including a number of widely used HFC and HFO refrigerants (e.g., HFC-125, HFC-134a, HFO-1234yf, HFO-1234ze) and the many refrigerant blends containing these gases.[10]

There are also concerns over by-product emissions of HFC-23 (GWP 12,400) through the production of HCFC-22, which is a feedstock of HFO-1234yf and other 'low-GWP' HFCs. Global emissions of long-lived HFC-23 are as much as eight times larger than expected, estimated at 17.2 ± 0.8 kt/yr in 2019.[11]

Based on these concerns, HFOs are contained in Annex II of the updated EU F-gas Regulation proposal and are subject to its scope, including the general requirement to prevent emissions, and the requirements concerning recovery of gases, leak checks, record keeping, and proper labelling. The proposal also contains measures to ensure that technicians undertaking installation, servicing, maintenance and reporting of equipment are trained and certified in natural refrigerant technologies, which has been a key barrier to their adoption to date.[12] The European Parliament is proposing more concrete measures to address concerns over HFOs, extending the phase-down to a complete phase-out of HFCs and applying new equipment bans to all fluorinated gases.[13]

Montreal Protocol Decision XIX/6 para 9 encourages Parties to "promote the selection of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate, as well as meeting other health, safety and economic considerations." Accordingly, the ExCom agreed cost guidelines for Stage 1 HPMPs that provided funding of up to a maximum of 25% above the cost effectiveness threshold for projects when needed for the introduction of low-GWP alternatives. The ExCom also agreed to consider, on a case-by-case basis, funding higher levels of incremental operating costs when required for the introduction of low-GWP water-blown technology.[14] For stage II of HPMPs, in addition to allowing up to a 25% increase above the cost-effectiveness threshold for introduction of low-GWP alternatives, the ExCom decided that

[9] Holland et al. (2021). Investigation of the Production of Trifluoroacetic Acid from Two Halocarbons, HFC-134a and HFO-1234yf and Its Fates Using a Global Three-Dimensional Chemical Transport Model. ACS Earth and Space Chemistry 2021 5(4):849-857. Available here.
[10] Proposed restriction non the manufacture, placing on the market and use of per- and polyfluoroalkyl substances (PFAS). Available here
[11] World Meteorological Organization (WMO). *Scientific Assessment of Ozone Depletion: 2022*, GAW Report No. 278, 509 pp.; WMO: Geneva, 2022. P20. Available here
[12] EU F-Gas Regulation Proposal (2022), Available here.
[13] Amendments adopted by the European Parliament on 30 March 2023, Available here.
[14] ExCom decision 60/44, Available here.

SMEs in the foam sector with consumption of less than 20 metric tonnes could exceed the threshold by up to 40%.[15]

Given the growing concern over PFAS impacts of HFOs, it behoves the ExCom to consider these environmental impacts when selecting alternatives to HCFCs and promote non-fluorinated alternatives. It clearly makes sense to extend this consideration to the HFC phase-down under the Kigali Amendment, potentially through a similar mechanism to that used for the HPMPs to promote low-GWP alternatives.

EIA UK

62-63 Upper Street,

London, N1 0NY, UK

T: +44 (0) 20 7354 7960

E: ukinfo@eia-international.org

eia-international.org

EIA US

PO Box 53343

Washington DC 20009 USA

T: +1 202 483 6621

E: info@eia-global.org

eia-global.org

[15] ExCom decision 74/50. Available here.