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IMPLEMENTATION OF THE MONTREAL PROTOCOL
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Montreal, 26-30 May 2025

REPORT OF THE INFORMAL HALF-DAY SESSION ON STRATEGIC APPROACHES TO KIGALI AMENDMENT IMPLEMENTATION FOR SUSTAINABLE HFC PHASE-DOWN AND THE CONTRIBUTION OF MULTILATERAL FUND ACTIVITIES TO SUSTAINABLE COOLING

INTRODUCTION

1. The informal half-day session on strategic approaches to Kigali Amendment implementation for sustainable HFC phase-down and the contribution of Multilateral Fund activities to sustainable cooling (decision 94/62) was held at the headquarters of the International Civil Aviation Organization (ICAO) in Montreal, Canada, on 9 December 2024.

2. The session was attended by members and co-opted members of the Executive Committee, representatives of bilateral and implementing agencies, the representative of the European Union and its member states, the Ozone Secretariat, and other stakeholders.

OPENING OF THE SESSION

3. The session was opened by the facilitator, David Fairman, Senior Mediator at the Consensus Building Institute and Associate Director of the MIT-Harvard Public Disputes Programme.

4. In her opening comments, the Chief Officer welcomed participants. She said that the adoption by the Executive Committee, at its 95th meeting, of the guidelines for funding the phase-down of HFCs in Article 5 countries, of decisions related to energy efficiency, including the establishment of a revolving fund, and other decisions, had been landmark decisions that will enable Article 5 countries in designing a strategic approach for the implementation of the Kigali Amendment. She recalled that the scope of the present session was more focused than the previous one had been and that the group would be considering sustainable cooling in addition to strategic approaches to implementation of the Kigali Amendment.

Pre-session documents of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol are without prejudice to any decision that the Executive Committee might take following issuance of the document.

Setting the scene on strategic sectoral plans

5. The representative of the Secretariat made a presentation, recalling the evolution of the Multilateral Fund, its work and achievements and outlining the key features of the Fund. Noting the strong focus on compliance, he also asked whether there were aspects that could be improved or further developed, such as the achievement of additional environmental and energy-efficiency benefits; approaches beyond the funding modality of incremental costs that, with the exception of energy efficiency, had always been applied; broader institutional coordination; improving management of the refrigerant life cycle; and strengthening the Multilateral Fund's ability to support end users. He stressed that to date the sectoral focus of the Fund had been heavily on the supply of equipment and controlled substances and said that there was great potential to work with stakeholders on the demand side, including in the tourism, fisheries and cold chain industries.

SESSION 1: UNWRAPPING EMERGING SECTORS UNDER THE MULTILATERAL FUND

6. To set the scene, representatives of parties and observers made a series of presentations as follows.[1]

1.1 Fisheries and tourism sectors in Maldives

7. The representative of the Maldives gave an overview of the fisheries and tourism sectors and of HFC use in those sectors. Demand for cooling was rapidly growing in line with the growth of both sectors. Key challenges were a lack of technological guidance, insufficient capacities for adaptation to alternatives and the existence of multiple responsible authorities. To respond to those challenges, she suggested special support programmes, tailor-made sectoral plans and regional programmes, strengthened infrastructure, a policy study and a special recovery, recycling and reclamation model. Innovative approaches were important.

1.2 Fisheries and tourism sectors in Grenada

8. The representative of Grenada gave an overview of the tourism sector and the smaller fisheries sector and of HFC use in both sectors. He said that the tourism sector was responsible for some 50-60 per cent of all energy consumption in the country. Key challenges were the high initial cost of replacement technologies; the accessibility of alternative technologies; insufficient capacities and technical expertise; climate vulnerabilities; and end-of-life equipment management. To respond to those challenges, he said that Grenada was focusing on sector-specific analysis; further internal and external resource mobilization; the promotion of energy-efficiency and minimum energy performance standards; district cooling opportunities; greater use of incentives; and renewable energy sources.

1.3 Adopting transcritical carbon dioxide in supermarkets in Chile, starting with an end-user project supported by the Multilateral Fund

9. The representative of Chile gave an overview of the adoption of transcritical carbon dioxide in supermarkets in Chile, from the initial skepticism of the supermarkets to their embracing of the technology. A study tour to Italy had enabled them to see the benefits firsthand, and they had been emboldened by the involvement of the government and the United Nations, which they considered reputable partners, resulting in the replication of the technology from two supermarkets co-financed by the Multilateral Fund and a further supermarket by the Climate and Clean Air Coalition, to 35 supermarkets and ten logistic centers and chambers for the food industry.

[1] https://multilateralfund.org/meetings/other/95

1.4 Designing holistic approaches and a road map for cold chain in Rwanda: Understanding the role of regional centres of excellence in promoting the adoption of sustainable cooling through the Multilateral Fund

10. A representative of the Clean Cooling Network said that, through the assessments conducted by the Network when setting up the Africa centre of excellence, it found that previous needs assessments had been insufficiently detailed; in-country refrigeration training did not always meet international standards; some small and medium-sized enterprises (SMEs) did not have robust standard operating procedures; and there was no rigorous design of systems. Centres of excellence could help optimize implementation of the Kigali HFC implementation plans (KIPs) by assisting in the upgrading of training content and infrastructure; providing technical consultancy; and offering approaches related to system design tools, modelling and data.

1.5 Strengthening infrastructure and technical capacity in Article 5 countries to handle refrigerants with low global-warming potential and blends in small- and medium-sized enterprises

11. The representative of India gave an overview of the SME market and the HFC market in his country, stating that around 80 per cent of the HFC-consuming enterprises were SMEs. Key challenges related to the supply of equipment, components and refrigerants with low global-warming potential (GWP); a lack of infrastructure and capacities; and technician certification. Suggested actions included the development of action plan for a holistic approach to Montreal Protocol issues and sustainable cooling; the establishment of centres of excellence; enhanced support for SMEs; a framework for promoting synergies with relevant entities; global outreach programmes and additional funding.

1.6 Public consortia as a tool for effective Montreal Protocol implementation: the Italian experience

12. The representative of Italy gave a presentation on how Italy had implemented the Montreal Protocol through the enactment and implementation of domestic legislation. The approach had involved agreements with consortiums of businesses that produced, distributed or used ODS. Such an approach had proven an effective way to bring all stakeholders together, enabling them to have a common understanding and pursue joint gains. Nevertheless, better integration between the central and local authorities in relation to the waste legislation was needed; there was a high administrative burden owing to the authorizations required from local authorities; and assurances of high-quality standards were needed in relation to the transport of the ODS.

1.7 Summary of issues and questions stemming from the presentations

13. The representative of UNEP summarized the issues in the presentations and highlighted key questions that participants might wish to consider in the ensuing discussion.

14. In relation to the Maldives and Grenada, he noted the importance of fisheries and tourism to the economies of small island developing States; the specific technical challenges that needed to be overcome; and asked how sector approaches could be applied to fisheries and tourism, specifically in low-volume-consuming (LVC) countries; how investment and non-investment activities for those two sectors could be addressed through KIPs and other funding windows; and whether the discussions on a revolving fund for end-user incentive projects that had taken place at the 95th meeting of the Executive Committee (item 11(b) in document UNEP/OzL.Pro/ExCom/95/94) might be applicable to some of the LVC priority areas, like the tourism and fisheries sectors.

15. In relation to Chile, he noted the example related to the food cold chain and the critical role of end users, and asked whether it was possible to build on such successful pilot projects and replicate them with other end users; whether the food cold chain should be reflected more clearly in KIPs; and how discussions and activities on life-cycle refrigeration management could be linked to the food cold chain sector.

16. In relation to centres of excellence, he noted such centres could become brain trusts for the Montreal Protocol and provide services in relation to sustainable cooling and asked whether projects and activities in KIPs should somehow be linked to the centres of excellence and, if so, how such centres could be operationalized to enable all the countries in the region to benefit. In relation to SMEs, he asked whether there were new approaches that could be used to assist SMEs more effectively; and whether SMEs should be addressed earlier in the HFC phase-down process than they had been in the HCFC phase-out process.

17. In relation to the importance of partnerships with the private sector, including through agreements and industry consortiums, he asked what type of arrangements could be used to partner with the private sector in the HFC phase-down; and, whether that type of cooperation was reflected in KIPs and other projects.

1.8 Discussion

18. In the ensuing discussion, members raised a number of issues that they deemed important to consider further, such as the sectoral approach for ensuring a holistic response to HFC phase-down, while taking into account the specificities of different regions; supply chain issues; the sustainability of the phase-down to ensure the continuity of business operations; technical assistance and capacity-building for enterprises, especially SMEs; regional centres of excellence to strengthen national ozone units and infrastructure; challenges in terms of the use of low-GWP alternatives; life-cycle refrigerant management, effective service centres and recovery and recycling centres; inter- and intra-institutional coordination; and exploiting the interlinkages between Montreal Protocol issues and other international agreements and initiatives on matters such as climate change, the food cold chain and sustainability more generally, to obtain the multifarious associated benefits.

19. Given the emphasis on sectoral approaches, one member asked if there was anything about the current structure of the KIP that would prevent a country from employing such an approach in the KIP. Another member said that it had been easy to take a sectoral approach to the phase-out of CFCs because the alternatives had been readily accessible and affordable. That was not the case with HFCs, but there were some lessons on which countries could draw.

20. In relation to SMEs, one member questioned the value of starting the phase-down efforts with such enterprises given that, in general, SMEs would find it harder to transition away from HFCs than larger enterprises, which would in any case likely have higher consumption and have more of an impact on the phase-down. Another member said that the Multilateral Fund lumped SMEs together under the category "servicing", which limited the available funding; while each enterprise had only small consumption, together they accounted for larger volumes.

21. In relation to the food cold chain being adequately reflected in the KIPs, one member was of the view that the sector was indeed present therein, but likely in a disjointed manner, and that it could be approached more strategically. He drew attention to the fact that country programme data showed that R-404A and R-507A, which were used predominantly in the food cold chain, accounted for about 42 per cent of LVC counties' HFC consumption in carbon dioxide-equivalent. Alternatives were available, but they were costly, which was perhaps a reason for less focus on that sector. There were, however, ways for LVC countries to supplement the funding that they are entitled to for their KIPs, such as by applying for funding under the energy-efficiency funding window. In response, another member highlighted that the Fund was providing more money for non-compliance activities, that were optional, than for those related to HFC phase-down. It was necessary to ensure that LVC countries could access sufficient financing directly related to their phase-down obligations.

22. One member asked whether, in order to fast track the adoption of affordable and sustainable alternatives in the cooling sector, the Multilateral Fund would be willing to fund the local commercial

production of refrigerant-grade hydrocarbon refrigerants in Article 5 countries. Another member expressed willingness to consider the matter.

23. In an attempt to future-proof the response to cooling needs, one member proposed supporting demonstration projects using innovative technologies, such as passive cooling or refrigerant-free indoor air- cooling systems that worked without the need for electricity or refrigerant.

24. While acknowledging the utility of staying abreast of work under related initiatives, one member cautioned about creating confusion among policymakers through the creation of too close linkages with other international agreements. Another member, however, said countries that were parties to multiple agreements might welcome the opportunity to leverage additional funding through such links. A third member asked whether the national ozone units had the knowledge and experience to enter into contact with entities working on related matters, such as energy efficiency. He suggested that representatives of organizations working on related topics be invited to a subsequent half-day session so that the Committee could find out more about their activities.

25. A representative of the private sector said that, in the transition to low-GWP energy-efficient technologies, one of the challenges was the absence of crucially needed infrastructure that the private sector did not consider itself responsible for providing. He suggested that the Multilateral Fund consider what it could do to create the enabling environment for the transition to low-GWP energy-efficient technologies, as opposed to funding it. To do so, it would have to enter into strategic partnerships with others on issues such as data-gathering, life-cycle refrigeration management, servicing, end-of-life equipment management, renewable energy, building codes and standards and minimum energy performance standards.

SESSION 2: INTERVENTIONS BEYOND STANDARD BUSINESS UNDER THE MULTILATERAL FUND

26. To set the scene, representatives of parties and observers made a series of presentations as follows.[2]

2.1 Opportunities and challenges on energy efficiency in Southeast Asia

27. The representative of the World Bank made a presentation on opportunities to make the most impact under the Multilateral Fund's energy-efficiency window. She noted that many air-conditioning manufacturing enterprises had already converted to a lower-GWP refrigerant in the context of the HCFC phase-out, were unlikely to further transition in the next several years, and were thus ineligible for assistance in the near future to improve the energy efficiency of the equipment they manufacture notwithstanding their significant growth rates and potentially very large environmental benefits such assistance could provide. The two main challenges to engaging manufacturers and suppliers in improving energy efficiency were the small number of subsectors/manufacturers likely to be eligible for Multilateral Fund support and the focus on requiring minimum energy performance standards. The Executive Committee might consider widening the eligibility. It might also consider ways for existing Fund support to generate more proposals on energy efficiency; energy efficiency activities that might also allow HFC reductions; and policy or other measures that could serve as a surrogate for minimum energy performance standards.

2.2 Possible strategies to address growth in residential air-conditioning in high ambient temperature countries

28. The representative of Kuwait gave a presentation on innovative approaches to addressing the growing demand for cooling in Gulf Cooperation Council countries. Supplying residential cooling was challenging, demanding high levels of energy and continuous adaptation, owing to the rapid evolution of

[2] Ibid.

cooling technologies. Governments were thinking outside the box, looking to alternative sources of cooling and making energy savings, through, for example, building design, behaviour change, building materials and smart technology. Policy considerations included regulation, incentives, public awareness and investment in research.

2.3 Sustainable cooling solutions by integrating refrigeration and air-conditioning equipment replacement for Montreal Protocol controls, energy efficiency and life-cycle refrigerant management in Ghana

29. The representative of Ghana spoke about the approach to the HFC phase-out in his country, where the refrigeration and air conditioning sector was forecast to grow considerably. Unit air conditioners were already responsible for most emissions. The Government was focusing on the following areas, in accordance with its cooling plan: policies, including laws and regulations, labelling, minimum energy performance standards and a ban on the import of used equipment; end-of-life management, including training and capacity-building, standard operating procedures, controlled-substance management, and recycling and reclamation; and market interventions, including promotion of low-GWP refrigerants and energy-efficient air conditioners and refrigerators.

2.4 Innovative strategies for early HFC phase-down and enhanced energy efficiency for sustainable cooling

30. The representative of UNDP gave a presentation on how the Multilateral Fund might upgrade its operation to include sustainable cooling. She proposed a three-fold approach that aimed for system change beyond compliance: facilitating the coherence of policies and solutions: continuing to support innovative low-GWP, high-energy-efficiency technologies; and designing an integrated programme for market transformation. National cooling plans could serve as the overarching policy framework for sustainable cooling, helping with data collection and analysis, awareness-raising, collaboration and identification of gaps and opportunities. The Multilateral Fund might also consider investing more in end-user sectors.

2.5 Interventions in the demand side that match the supply side for sustainable HFC phase-down: the Australian experience

31. The representative of Australia spoke about the country's stepped approach to HFC phase-down and how it was planning for demand issues that were expected to arise. Demand-control measures being considered included limits on the import of equipment containing controlled gases, on the GWP of imported equipment and on the manufacture of equipment that used high-GWP refrigerants; incentives to replace high-GWP equipment; equipment retrofits where feasible; a temporary limit on the destruction of high-GWP refrigerants; and a legal requirement to lower refrigerant GWP overall.

2.6 Summary of issues and questions stemming from the presentations

32. The representative of UNIDO presented a number of ideas that applied to various concepts mentioned in the presentations, focusing on four issues.

33. In relation to harnessing technology transformation and emerging opportunities, he mentioned that renewable energy in cold chain solutions was a tangible example of how the implementation of the Kigali Amendment intersected with the Sustainable Development Goals. District cooling systems for cities presented another transformative opportunity, optimizing energy consumption while enhancing resilience to heat waves.

34. In relation to accelerating technological innovation and entrepreneurship, he mentioned that the value of the cooling market in developing economies was expected to grow from US $300 billion per year currently to US $600 billion per year by 2050. It thus harboured a unique strategic opportunity to unleash

the ingenuity and creativity of the private sector, especially SMEs, in providing cooling solutions in developing countries. One way to bring private financing into the sustainable cooling sector was to establish a sustainable cooling innovation fund for technical assistance and investment facilitation support and services to SMEs.

35. In relation to systems thinking, he referred to a systems approach to the cooling sector that would provide a holistic view of cooling, enabling analysis of the interplay between the various parts of the system; allowing changes to the cooling sector through systems innovation; focusing on key levers of change, including human behaviour, technology, business models and financing and innovation around policy and regulations.

36. And finally, in relation to innovative financing, he referred to innovative financing models that were essential for accelerating and scaling up activities related to the Kigali Amendment.

2.7 Discussion

37. The ensuing discussion focused on possible areas that would enable the Multilateral Fund to make a greater contribution to sustainable cooling. Echoing ideas put forward by the presenters and adding some of their own, members mentioned the integration of renewable energy; planned preventive maintenance; capacity-building; awareness-raising and incentives for behaviour change; a less stringent insistence on minimum energy performance standards; and possible opportunities to support innovation that further compliance and potentially beyond.

38. One member noted that minimum energy performance standards indicated only the energy efficiency of equipment before installation and became meaningless when that equipment was not properly installed or operated. Furthermore, the degradation of energy efficiency as equipment aged was never taken into account. As a result, a stringent insistence on minimum energy performance standards increased the cost without necessarily achieving the desired energy reduction.

39. On the topic of incentives, one member said that incentives worked, but both a specific process and funding were needed, which required some thought. Another member underscored the effectiveness of cash incentives rather than a promised future benefit. A representative of the private sector cautioned that incentives could be perceived by some as regulation, but that they did help to clarify the objectives and thus assisted the private sector in identifying the opportunities and assessing the market.

40. He also suggested that the Multilateral Fund consider developing a standardized data collection initiative, which he said would enable everyone to speak the same language when talking about the various aspect of cooling and refrigeration and would also help the private sector to understand what the potential targets were. Noting that the private sector often developed technology, the complexity of which could go beyond what was currently needed in Article 5 countries, he added that consistency in the approach would also help the private sector identify market need and thus objectives.

41. One member addressed the question of the extent to which the Executive Committee should consider interventions beyond its standard business under the Multilateral Fund. In his view, the Committee should build on the Fund's proven strengths. While that did not preclude being innovative and occasionally doing things differently, the Committee should not become distracted by approaches or objectives that did not assist countries in meeting their objectives under the Protocol. While reducing demand for HFCs was still within the scope of Multilateral Fund supported activities, how to best do so was still unclear. He also pointed out that, given the more challenging technologies involved in the HFC phase-down and the focus on refrigerant and equipment end of life and energy efficiency, more consideration could be given to other aspects, such as projects that targeted end-users or technology demonstration, and to local assemblers, who were now faced with more challenging technologies, end-of-life management and energy efficiency. Nevertheless, energy-efficiency considerations should remain within the context of phasing down HFCs and

thus remained compliance related. Hence, going beyond standard business had more to do with having a greater focus on certain aspects and activities while maintaining the central objective of assisting countries in meeting their obligations under the Montreal Protocol. While avoiding increases in demand for cooling could be considered a legitimate goal for the Multilateral Fund, the issue was how to do that, introducing new areas of work, entailed the development of frameworks, criteria and decisions, leaving less time to focus on what had already been shown to work and what the Multilateral Fund already did well.

42. One member sought additional information on the concepts of "integrated programmes for market transformation" and "system change beyond compliance", as mentioned in a presentation. Responding, the representative of UNDP explained that a new funding window or framework could focus both on compliance and aspects that addressed more than compliance, such as energy efficiency, or work with different instruments, like a revolving fund or an incentive or demonstration programme. She noted that other mechanisms, such as the Global Environment Facility, now had large integrated impact programmes that attempted to integrate various focal areas; while the Multilateral Fund was not yet ready for that, it could eventually be considered.

CLOSURE OF THE MEETING

43. In closing, the Chief Officer thanked Mr. Fairman for his skillful moderation of the sessions and members for their discussions. She highlighted that, in fact, the Kigali Amendment was outside the Multilateral Fund's usual order of business, and its implementation presented opportunities for approaches beyond usual practice. The Executive Committee had decided to continue its discussions at a half-day session immediately preceding the 96th meeting, and then at the 96th meeting itself. The next half-day session might usefully focus on a set of actions to strengthen the capacity of the key institutional actors in the Multilateral Fund to support Kigali Amendment implementation and sustainable cooling, and what might motivate toward early action to phase down HFCs as these were two of the key outcomes of the first half-day session that were not discussed further. In addition, one member noted the discussions that had taken place, and that Executive Committee should be invited to provide written inputs that could inform further discussions.