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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-seventh Meeting
Montreal, 28 June-2 July 2021[1]

KEY ASPECTS RELATED TO HFC-23 BY-PRODUCT CONTROL TECHNOLOGIES (DECISIONS 86/95 AND 86/96)

Background

Discussions at the 84th meeting

1. At its 84th meeting, the Executive Committee considered the document on key aspects related to HFC-23 by-product control technologies.[2] During its discussions, members stressed the importance of addressing the policy issues related to controlling HFC-23 by-product emissions at the 84th meeting, particularly given that the Governments of Argentina and Mexico had both ratified the Kigali Amendment and had compliance obligations to control HFC-23 by-product emissions as of 1 January 2020 and reporting thereon. A number of considerations were highlighted, including the importance of: basing the level of financial support on the most cost-effective option in situations where HFC-23 by-product emissions were not already being controlled; basing incremental operating costs (IOCs) on HCFC-22 production from prior rather than future years; taking into account production process improvements that would reduce HFC-23 by-product generation rates over time; ensuring the sustainability of the HFC-23 emissions phase-out; considering the role played by domestic policies and regulations in ensuring sustained HFC-23 by-product destruction; and considering the eligibility of destruction back-up systems, if they were needed at all. It was also noted that controlling HFC-23 emissions generated by the production of HCFC-22 that was exported to non-Article 5 countries was a new concern that needed careful consideration.

2. Several members also had concerns regarding the Ozone Secretariat's understanding of paragraph 6 of Article 2J of the Montreal Protocol reflected in the document. It was felt that the understanding could be taken to mean that Parties simply had to report their HFC-23 by-product emissions rather than making their best efforts to reduce them using approved technologies, as called for in the Protocol. At the same time, members recognized that the Executive Committee did not have the authority to decide what constituted compliance with paragraph 6 of the Protocol.

[1] Online meetings and an intersessional approval process will be held in June and July 2021 due to coronavirus disease (COVID-19)

[2] UNEP/OzL.Pro/ExCom/84/70

3. The Committee agreed to establish a contact group to discuss the issues related to HFC-23 by-product emission control raised in the document. The group was, however, unable to reach consensus. One member, supported by two others, expressed concern that the Committee was not making the progress required to enable Parties to the Kigali Amendment to comply with the 1 January 2020 control measure. The Committee agreed to hold additional discussions in the contact group. Subsequently, the convener of the contact group reported that despite substantial discussions, the group had again been unable to resolve the issues.

4. Subsequently, one member made a statement, saying, that despite the Montreal Protocol's proud history of achievements, the 84th meeting would likely be remembered for the failure of the mechanism to find a solution that would enable Article 5 countries producing HCFC-22 to comply with the HFC-23 control measures. Article 10 of the Protocol contained the obligation to provide financial assistance to Article 5 countries, but the Executive Committee had failed in that regard. That was a problem not only for Article 5 countries that produced HCFC-22, but also for all Article 5 countries. The country would therefore raise that matter with the Implementation Committee and the Open-ended Working Group.

Discussions at the 86th meeting

5. In line with the intersessional approval process established for the 85th meeting, the Executive Committee had decided to consider the two project proposals and related policy matters at its 86th meeting; agreed to reconstitute the contact group and hold online meetings to pursue consideration of the HFC-23 by-product control projects in Argentina and Mexico; and defer, to the 87th meeting, consideration of the policy matters contained in document UNEP/OzL.Pro/ExCom/86/94.

6. At the 86th meeting, the Executive Committee *inter alia* approved, in principle, the HFC-23 by-product control project at Quimobásicos, and requested the Secretariat, in cooperation with UNIDO, to prepare a draft Agreement between the Government of Mexico and the Executive Committee for the control of HFC-23 by-product emissions for consideration at the 87th meeting, in light of the guidance provided by the Executive Committee at the 86th meeting (decision 86/96). Accordingly, many of the policy issues raised in document UNEP/OzL.Pro/ExCom/86/94 related to the project in Mexico are moot.

7. Notwithstanding constructive discussions also held at the 86th meeting, the contact group was unable to reach consensus on the HFC-23 project in Argentina. Accordingly, the Executive Committee decided to continue consideration of the project at the 87th meeting, noting the working document containing a draft decision on the project considered by the contact group at the 86th meeting,[3] and that the Government of Argentina, through UNIDO, would submit a counter-proposal for consideration at the 87th meeting (decision 86/95).

Scope of the document

8. The Secretariat has prepared the present document in response to decisions 86/95 and 86/96.

9. The document consists of the following four parts, and a recommendation:

I	Policy issues arising in the projects in Argentina and Mexico
II	Policy issues arising in the project in Argentina
III	Policy issues arising in the project in Mexico
IV	Scientific study on HFC-23 emissions
	Recommendation

[3] Contained in Annex XLIX to document UNEP/OzL.Pro/ExCom/86/100.

10. In each part, the document explains the issues identified, and seeks guidance from the Executive Committee on how to address those issues.

I. Policy issues arising in the projects in Argentina and Mexico

Timeline for HFC-23 by-product emission control

11. The Kigali Amendment entered into force on 1 January 2019. Paragraph 6 of Article 2J on HFCs states that each Party manufacturing Annex C, Group I, or Annex F substances shall ensure that for the twelve-month period commencing on 1 January 2020, and in each twelve-month period thereafter, its emissions of Annex F, Group II, substances generated in each production facility that manufactures Annex C, Group I, or Annex F substances are destroyed to the extent practicable using technology approved by the Parties in the same twelve-month period.

12. The Governments of Argentina and Mexico had ratified the Kigali Amendment; according to their dates of ratification, it entered into force on 22 February 2020 for Argentina (i.e., 90 days after its ratification), and 1 January 2019 (the date the Kigali Amendment entered into force) for Mexico.

13. Both Argentina and Mexico have an HCFC production facility which generates HFC-23 as a by-product and emits it to the atmosphere. The countries could be at risk of not being in compliance with their obligations under paragraph 6 of Article 2J from 22 February 2020 for Argentina and from 1 January 2020 for Mexico, until the emissions of HFC-23 can be controlled (mainly through destruction); based on the projects submitted to the 86th and 87th meetings, such emissions might be controlled by 1 January 2022.

14. At the 84th meeting, members recognized that the Executive Committee did not have the authority to decide what constituted compliance with paragraph 6 of Article 2J, particularly in regard to the term "destroyed to the extent practicable." Accordingly, the Executive Committee may wish to seek guidance from the Parties on this matter.

Basis for HCFC-22 production to be used in determining IOCs

15. The Secretariat raised the issue of basis for HCFC-22 production to be used in determining IOCs in document UNEP/OzL.Pro/ExCom/86/94. In the context of the project in Mexico, at its 86th meeting, the Executive Committee decided on a maximum amount of funding for IOCs, which would be divided into annual tranches upon verification of the quantity of HFC-23 by-product destroyed, and that IOCs would be calculated by multiplying the number of kilogrammes of HFC-23 by-product destroyed by the agreed cost of destruction (decision 86/96(b)(iii) and (iv)). The Secretariat and UNIDO agreed to use a similar approach in the context of the project in Argentina at the 87th meeting.[4]

16. Accordingly, the Executive Committee may wish to note that a maximum amount of funding approved in principle for IOCs would be based on historic HCFC-22 production, and that IOCs would be calculated by multiplying the number of kilogrammes of HFC-23 by-product destroyed by the agreed cost of destruction for that project.

Incentivizing process optimization to reduce the HFC-23 by-product generation rate

17. As noted in paragraph 16 above, IOCs would be calculated by multiplying the number of kilogrammes of HFC-23 by-product destroyed by the agreed cost of destruction, and would be independent of the HFC-23 by-product generation rate as long as IOCs remained below the maximum amount of funding

[4] UNEP/OzL.Pro/ExCom/87/53.

approved in principle for IOCs. The Executive Committee may wish to provide guidance on whether to incentivize process optimization to reduce the HFC-23 by-product generation rate.

II. Policy issues arising in the project in Argentina

Duration for which funding support for HFC-23 by-product emission controls is provided

18. During the discussion of the duration for which funding support for HFC-23 by-product emission controls should be provided, the Executive Committee have expressed different views. Some members have suggested that IOCs should be provided as long as the destruction of HFC-23 is taking place; others have suggested a more limited duration. Some members have suggested that IOCs are intended to incentivize early action, and the need for such an incentive may change as the cost of adopting control measures becomes the regular cost of business. Other members have suggested that the costs of destruction should not be considered as IOCs but recurring costs. In contrast to IOCs, which are expected to decrease as the cost of the alternative to be phased in decreases and the cost of the controlled substance that is phased out increases, many of those recurring costs are not expected to change with time and, therefore, funding should continue to be provided for them.

19. The Executive Committee may wish to provide guidance on:

(a) The duration of the IOCs; and/or

(b) Whether to develop guidelines to determine recurring or operating costs for HFC-23 by-product control projects.

III. Policy issues arising in the project in Mexico

Eligibility of HFC-23 by-product associated with HCFC-22 production for feedstock use

20. The Parties to the Montreal Protocol had determined that production (and consumption) of controlled substances for feedstock uses should be excluded from control measures, based on the understanding that the controlled substance would be transformed during the manufacture of other chemicals and, therefore, would result in insignificant emissions into the atmosphere.

21. HFC-23 by-product control measures were intended to provide climate benefits irrespective of whether the HCFC-22 production that generated the HFC-23 by-product is used for controlled or feedstock uses.

22. In approving the HFC-23 project in Mexico, the Executive Committee *inter alia* noted that the funding provided reflected reductions for non-Article 5 ownership and exports to non-Article 5 Parties (decision 86/96(c)(iv)); no such reductions were made for HCFC-22 production for feedstock use. Accordingly, the Executive Committee may wish to:

(a) Note that the eligibility of HFC-23 by-product controls would be independent of whether the production of HCFC-22 is for controlled or for feedstock uses; and

(b) Note that the term “production” in the context of HFC-23 by-product control projects supported by the Multilateral Fund means the total amount of HCFC-22 produced for all uses, including controlled and feedstock uses, irrespective of any subsequent destruction, recycling, and reuse of that HCFC-22.

IV. Scientific study on HFC-23 emissions

23. At the 82nd meeting, the Executive Committee considered document UNEP/OzL.Pro/ExCom/82/68 on cost-effective options for controlling HFC-23 by-product emissions, pursuant to decision 81/68(e). In response to a question about the smaller decrease in HFC-23 emissions reported in the scientific journal article by Simmonds et al.[5] (which was cited in the document), the representative of the Secretariat clarified that, while the emissions data for years prior to 2016 in Simmonds et al. had been much as anticipated, a difference had started to become apparent in 2016;[6] and that work was continuing in the scientific community on the matter.

24. A scientific journal article published in January 2020[7] reported that, contrary to expected reductions of HFC-23 emissions, atmospheric observations showed that those emissions had increased and in 2018 were higher than at any point in history (15,900 ± 900 metric tonnes (mt)/yr). Given the magnitude of the discrepancy between expected and observation-inferred emissions, the authors suggest that it was likely that HFC-23 emission reductions reported since 2015 had not been successfully implemented until at least the beginning of 2019, or there was substantial, unreported production of HCFC-22 from which HFC-23 had been vented, or some combination thereof. The difference between reported and observation-inferred estimates suggested that an additional ~309 million mt CO_2-eq emissions had been added to the atmosphere between 2015 and 2017.[8]

25. The Secretariat notes that it is unclear why emissions of HFC-23 are increasing, and that no information is available in the study by Stanley et al. to suggest where those increased emissions originate, including whether they are from Article 5 countries, non-Article 5 countries, or some combination thereof.

RECOMMENDATION

26. The Executive Committee may wish to:

(a) Note:

(i) The key aspects related to HFC-23 by-product control technologies (decisions 86/95 and 86/96) contained in document UNEP/OzL.Pro/ExCom/87/52;

(ii) That a maximum amount of funding approved in principle for incremental operating costs (IOCs) in HFC-23 projects would be based on historic HCFC-22 production, and that IOCs would be calculated by multiplying the number of kilogrammes of HFC-23 by-product destroyed by the agreed cost of destruction for that project;

[5] Simmonds et al., "Recent increases in the atmospheric growth rate and emissions of HFC-23 (CHF3) and the link to HCFC-22 (CHClF2) production," Atmos. Chem. Phys., 18, 4153–4169, 2018. https://doi.org/10.5194/acp-18-4153-2018.

[6] Paragraph 318 of UNEP/OzL.Pro/ExCom/82/72.

[7] Stanley et al., "Increase in global emissions of HFC-23 despite near-total expected reductions," Nature Communications, 11:397, 2020. https://doi.org/10.1038/s41467-019-13899-4.

[8] See also paragraph 38(b) of document UNEP/OzL.Conv.12(I)/6–UNEP/OzL.Pro.32/8 and figure 2-7 in WMO (World Meteorological Organization), Scientific Assessment of Ozone Depletion: 2018, Global Ozone Research and Monitoring Project–Report No. 58, 588 pp., Geneva, Switzerland, 2018.

(iii) That HFC-23 by-product controls would be eligible independent of whether the HCFC-22 production that generated the HFC-23 is for controlled or for feedstock uses;

(iv) That the term "production" in the context of HFC-23 by-product control projects supported by the Multilateral Fund means the total amount of HCFC-22 produced for all uses, including controlled and feedstock uses, irrespective of any subsequent destruction, recycling, and reuse of that HCFC-22;

(b) Provide guidance on the following issues related to HFC-23 by-product control projects:

(i) The duration of the IOCs and/or whether to develop guidelines to determine recurring or operating costs to HFC-23 by-product control projects; and

(ii) Whether to incentivize process optimization to reduce the HFC-23 by-product generation rate.