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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-sixth Meeting
Montreal, 26-30 May 2025
Item 9(c) of the provisional agenda¹

PROJECT PROPOSAL: MEXICO

This document consists of the comments and recommendation of the Secretariat on the following project proposal:

Phase-out

- | | | |
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| <ul style="list-style-type: none">• Control and phase-out of HFC-23 emissions in production of HCFC-22 at Quimobásicos (fourth tranche) | UNIDO | Blanket approval |
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¹ UNEP/OzL.Pro/ExCom/96/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Mexico

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
Control and phase-out of HFC-23 emissions in production of HCFC-22 at Quimobásicos	UNIDO (lead)	86 th	Phase-out to the extent practicable by 1 January 2022*

* The project was approved on the understanding that the Government of Mexico would ensure that, by 1 January 2022 and thereafter, emissions of HFC-23 by-product from HCFC-22 production lines were destroyed in compliance with the Montreal Protocol, such that emissions for both lines were at or below 0.1 kg of HFC-23 per 100 kg of HCFC-22 produced.

(II) LATEST ARTICLE 7 DATA (Annex C, Group I)	Year: 2023	168.23 ODP tonnes
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(III) VERIFIED PRODUCTION DATA* (mt)	Year: 2024
Chemical	Total sector consumption
HCFC-22 production**	3,431.81
HFC-23 generation	40.49
HFC-23 emissions	0.00***

* The country had not yet submitted 2024 data under its country programme or under Article 7 of the Montreal Protocol at the time of finalization of the present document.

** Includes production for controlled and feedstock uses.

*** Amount emitted is 0.0004 mt.

(V) ENDORSED BUSINESS PLAN	2025	2026	2027	Total
UNIDO Funding (US \$)	506,250	463,450	443,388	1,413,088

(VI) PROJECT DATA			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Maximum allowable emissions of Annex F, Group II substances per 100 kg of Annex C, Group I substances produced (kg)			n/a	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	n/a
Funding agreed in principle (US \$)	UNIDO	Project costs	483,058	0	492,160	374,381	473,131	433,131	414,381	374,381	414,381	374,380	3,833,384
		Support costs	33,814	0	34,451	26,207	33,119	30,319	29,007	26,207	29,007	26,206	268,337
Funds approved by ExCom (US \$)		Project costs	483,058	0	387,561	270,050	0	0	0	0	0	0	1,140,669
		Support costs	33,814	0	27,129	18,904	0	0	0	0	0	0	79,847
Total funds recommended for approval at this meeting (US \$)		Project costs					317,500						317,500
		Support costs					22,225						22,225

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Mexico, UNIDO as the designated implementing agency has submitted a request for funding for the fourth tranche of the project for the control and phase-out of HFC-23 emissions in the production of HCFC-22 at Quimobásicos, Mexico in the amount of US \$222,657, plus agency support costs of US \$15,586.² The submission includes a progress report on the implementation of the third tranche, the verification report on HCFC-22 production and HFC-23 by-product emissions for 2024, and the tranche implementation plan for 2025 to 2026.

Report on HCFC-22 production and HFC-23 by-product generated and emitted

2. As confirmed by the verification report, the Government of Mexico reported a total of 3,431.81 metric tonnes (mt) of HCFC-22 produced in 2024,³ with 40.4874 mt of HFC-23 by-product generated and 0.0004 mt of HFC-23 by-product emitted, as shown in table 1.

Table 1. Total HCFC-22 production for all uses and HFC-23 generated, destroyed, and emitted at Quimobásicos in 2024

Component	Quantity (mt)
HCFC-22 produced	3,431.81
HFC-23 generated	40.4874
HFC-23 destroyed	40.4870
HFC-23 emitted	0.0004

3. Production of HCFC-22 in 2024 decreased from the previous year and was lower than had been anticipated at the 94th meeting due to a reduction of export sales for feedstock uses. The HFC-23 by-product generation rate in 2024 was 1.18 per cent. The control and destruction of HFC-23 at the Quimobásicos plant continued to be carried out using one of the enterprise's on-site plasma-arc destruction units (PDUs).

Verification report

4. The verification report confirmed that the reported figures for 2024 shown in table 1 above are a reliable and accurate representation of the total HCFC-22 production and HFC-23 by-product generation and destruction that occurred at Quimobásicos in 2024. The verification concluded that the enterprise was in compliance with the Agreement between the country and the Executive Committee for HFC-23 by-product emissions released to the atmosphere as a result of HCFC-22 production. The verification was carried out and report prepared in line with the updated guidelines and the standard format used for the verification of ODS production phase-out (decision 93/102(c)),⁴ and confirmed that the enterprise's HCFC-22 production for controlled uses was below the quota allocated to the enterprise, thus enabling the country to comply with the Montreal Protocol control limits for HCFC production.

Progress report on the implementation of the third tranche

5. Quimobásicos continued using PDU-2 to destroy HFC-23 by-product in 2024. The plant also continued to operate the PDU at a lower capacity than the design capacity, which extends the PDU torch's useful lifetime and ensures optimal operational continuity. Due to the reduced demand for HCFC-22, the

² As per the letter of 5 March 2025 from the Ministry of the Environment and Natural Resources of Mexico to UNIDO.

³ The reported production is the total production of HCFC-22 for both feedstock and controlled uses.

⁴ Including by inter alia reviewing and verifying the conformity of raw material (anhydrous hydrogen fluoride and chloroform) consumption with HCFC-22 production; assessing production, including the number of operational days and raw material consumption; assessing production logs and financial records; reviewing the data provided by Quimobásicos for consistency and ensuring that the HCFC-22 production, sales figures and stock at the beginning of 2024 and the end of 2023 add up; and comparing actual production to the annual quota.

plant operated only 10 to 15 days per month in 2024; however, the frequency of stoppages did not negatively affect the PDU's destruction and removal efficiency.

Project implementation and monitoring

6. Under the third tranche, US \$25,836 was disbursed for project monitoring, leakage monitoring, and the verification of destruction, which included an independent verification report of the amounts of HCFC-22 produced, the amounts of HFC-23 by-product generated, and the amounts of HFC-23 that were destroyed, stored, sold, and/or vented.

Level of fund disbursement

7. As of March 2025, of the US \$1,140,669 approved so far, US \$1,125,850 (99 per cent) had been disbursed. The balance of US \$14,819 from the third tranche is expected to be disbursed in 2025.

Implementation plan for the fourth tranche

8. The following activities will be implemented between June 2025 and December 2026:
- (a) Continued destruction of HFC-23 by-product from the production of HCFC-22 at Quimobásicos; total production of HCFC-22 for all uses is anticipated to be 3,182 mt for 2025, with 47.725 mt of HFC-23 by-product generated and subsequently destroyed (US \$197,657); and
 - (b) Monitoring and verification of destruction, including an independent verification report (US \$25,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Progress report on the implementation of the third tranche

9. Quimobásicos continued to manage its production of HCFC-22 in such a manner as to ensure the by-product generation rate in 2024 was 1.18 per cent, down from 1.48 per cent in 2023. While these rates can fluctuate based on process variations,⁵ the 2024 rate was well below the enterprise's historic by-product generation rates as well as those experienced in many other countries, reflecting the continued excellent controls and operations of the enterprise. For 2025, Quimobásicos will aim for a by-product generation rate between 1.20 and 1.50 per cent.

10. Destruction of HFC-23 by-product was undertaken using PDU-2. As reported at the 92nd meeting, Quimobásicos also refurbished PDU-1, which is used to provide destruction services to third parties. UNIDO informed that since the 94th meeting, Quimobásicos had not provided this service.

11. The Secretariat notes with appreciation that the submission includes additional information on best practice technologies Quimobásicos has adopted to reduce HFC-23 emissions, including best practices for leakage control in HCFC-22 production (leak tightness testing of process equipment, management of gas recovery systems, equipment shutdown in case of valve leakage, preventative maintenance to process tank relief valves, and process control by ensuring operation within a specified range for identified variables)

⁵ As explained by UNIDO at the 94th meeting, process variations are an inevitable aspect of chemical manufacturing, and may include changes in raw material quality, adjustments in production rates to meet demand, small variations in process conditions such as temperature and pressure, and the lifespan and conditioning of the catalyst.

and best practices for leakage control of HFC-23 by-product emissions (leak tightness testing of process equipment, preventative maintenance of the PDU, and extension of PDU torch lifetime). The Secretariat further noted with appreciation that Quimobásicos intends to provide this information, along with its methodology for estimating and reporting HFC-23 emissions from HCFC-22 production, to the Government in order to respond to decision XXXVI/3.⁶

12. UNIDO confirmed that, in line with decision 86/96(b)(vi), no additional funding from other sources, including HFC-23 credits or offsets, for the control of HFC-23 by-product emissions from Quimobásicos have been requested or were received.

Implementation plan for the fourth tranche

Funding requested

13. In line with the table in paragraph 6 of the Agreement between the Government of Mexico and the Executive Committee, the funding for the fourth tranche was adjusted to US \$317,500 based on the 2024 by-product generation rate (1.18 per cent), the HCFC-22 produced (3,432 mt), and the maximum eligible incremental operating costs of US \$332,355 specified in the Agreement.

14. Noting also that the total agreed project funding had included US \$117,500, divided equally over the fourth and fifth tranches, for policy assistance to ensure that HFC-23 by-product emissions would continue to be controlled to the extent practicable after the completion of the project, an additional activity was included under the fourth tranche for a study and analysis of national policies and regulations on the matter; the fifth tranche would include the development of the legal instrument to ensure the sustained destruction of HFC-23.

15. Activities and funding for the fourth tranche were therefore agreed at US \$317,500 with the following breakdown:

- (a) Continued destruction of HFC-23 by-product from the production of HCFC-22 at Quimobásicos; total production of HCFC-22 for all uses is anticipated to be 3,182 mt for 2025, with 47.725 mt of HFC-23 by-product generated and subsequently destroyed (US \$248,569);
- (b) Policy assistance to ensure that HFC-23 by-product emissions would continue to be controlled to the extent practicable after the completion of the project, including a study and analysis of national policies and regulations (US \$58,750, of which US \$14,819 is from the remaining balances from the third tranche); and
- (c) Monitoring and verification of destruction, including an independent verification report (US \$25,000).

Sustainability of the HCFC phase-out and assessment of risks

16. The sustainability of HFC-23 emission controls will be sustained inter alia through the commitment by Quimobásicos to suspend production of HCFC-22 for up to two weeks to allow for the repair of the PDU; the refurbished second PDU (PDU-1) that is able to provide destruction services to third parties; and the commitment by the Government of Mexico to ensure that emissions of HFC-23 by-product from

⁶ The decision inter alia invites parties that have HCFC-22 production facilities to submit to the Ozone Secretariat, on a voluntary basis, by 31 March 2025, their current methodologies for estimating and reporting HFC-23 emissions from HCFC-22 production, and invites parties that have adopted best practice technologies to reduce HFC-23 emissions to provide information thereon to the Ozone Secretariat, on a voluntary basis, by 31 March 2025.

HCFC-22 production by Quimobásicos would continue to be controlled and verified in the same manner after the completion of the project, including through the development of a legal instrument to ensure the sustained destruction. The steps taken by the enterprise to ensure the optimal operation of the PDU and to minimize the HFC-23 by-product generation rate, including its proactive approach to maintenance and leak prevention, reduce the risk of HFC-23 emissions. The policy assistance planned under the fourth tranche, and that will continue in the fifth tranche, will assist the Government in ensuring HFC-23 by-product emissions would continue to be controlled to the extent practicable after the completion of the project.

Conclusion

17. Quimobásicos, with the support of the Government of Mexico and UNIDO, continued its outstanding efforts to ensure the destruction of HFC-23 by-product generated during the production of HCFC-22, in line with the Agreement between the Government of Mexico and the Executive Committee. Emissions of HFC-23 by-product from the production of HCFC-22 in 2024 have been insignificant. The disbursement rate is at 99 per cent; all approved funds under the first and second tranches have been disbursed, and the balance of US \$14,819 from the third tranche will be disbursed in 2025 as part of policy assistance.

RECOMMENDATION

18. The Fund Secretariat recommends that the Executive Committee note the progress report on the implementation of the third tranche for the project to control and phase-out HFC-23 emissions at Quimobásicos, Mexico, and further recommends blanket approval of the fourth tranche of the project and the corresponding 2025-2026 tranche implementation plan for Mexico at the funding level shown in the table below.

	Project title	Project funding (US \$)	Support costs (US \$)	Implementing agency
(a)	Control and phase-out of HFC-23 emissions in production of HCFC-22 at Quimobásicos (fourth tranche)	317,500	22,225	UNIDO