



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/94/44
24 April 2024

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-fourth Meeting
Montreal, 27-31 May 2024
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

- Control and phase-out of HFC-23 emissions in production of HCFC-22 at Quimobásicos (third tranche)

UNIDO

¹ UNEP/OzL.Pro/ExCom/94/1

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: 2022	208.69 ODP tonnes
---	------------	-------------------

(III) VERIFIED PRODUCTION DATA* (mt)		Year: 2023
Chemical	Total sector consumption	
HCFC-22 production**	4,427.72	
HFC-23 generation	65.34	
HFC-23 emissions	0.00***	

* The country had not yet submitted 2023 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 0.0043 mt.

(V) ENDORSED BUSINESS PLAN		2024	2025	2026	Total
UNIDO	Funding (US \$)	400,588	506,250	463,450	1,370,288

(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 \$)	UNIDO	Project costs	483,058	0	387,561	0	0	0	0	0	0	0	870,619
		Support costs	33,814	0	27,129	0	0	0	0	0	0	0	60,943
Total funds recommended for approval at this meeting (US \$)	UNIDO	Project costs				270,050							270,050
		Support costs				18,904							18,904

Secretariat's recommendation:	Blanket approval
--------------------------------------	------------------

PROJECT DESCRIPTION

1. On behalf of the Government of Mexico, UNIDO as the designated implementing agency has submitted a request for funding for the third tranche of the project for the control and phase-out of HFC-23 emissions in production of HCFC-22 at Quimobásicos, Mexico in the amount of US \$288,650, plus agency support costs of US \$20,205.² The submission includes a progress report on the implementation of the second tranche, the verification report on HCFC-22 production and HFC-23 by-product emissions for 2023 and the tranche implementation plan for 2024 to 2025.

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 4,427.72 metric tonnes (mt) of HCFC produced in 2023,³ with 65.344 mt of HFC-23 by-product generated, and 0.0043 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 2023

Component	Quantity (mt)
HCFC-22 produced	4,427.72
HFC-23 generated	65.34
HFC-23 destroyed	65.34
HFC-23 emitted	*0.00

*Amount emitted is 0.0043 mt

3. Production of HCFC-22 during 2023 decreased from the previous year, and was lower than expected at the 92nd meeting, due to decreased exports for feedstock uses in a non-Article 5 country. The HFC-23 by-product generation rate in 2023 was 1.48 per cent. The control and destruction of HFC-23 at the Quimobásicos plant was carried out using one of the enterprise's on-site plasma-arc destruction units (PDU).

Verification report

4. The verification report confirmed that the reported figures for 2023 shown in table 1 above are a reliable and accurate representation of HCFC-22 production and HFC-23 generation and destruction that occurred at Quimobásicos in 2023. 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.

Progress report on the implementation of the second tranche

5. Quimobásicos continued using PDU-2 to destroy HFC-23 by-product in 2023. In order to optimize the operation of the PDU, Quimobásicos continued to operate the PDU at a lower capacity than the design capacity, which extended the PDU torch's useful lifetime and ensured optimal operational continuity. In addition, Quimobásicos improved the operational continuity of the PDU by installing an Uninterruptible Power Supply (UPS), thereby minimizing the number power shutdowns.

Project implementation and monitoring

6. Of the US \$20,000 allocated under the second tranche, US \$20,000 (100 per cent) has been disbursed for project monitoring and verification of destruction including an independent verification report

² As per the letter of 15 March 2024 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.

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 2024, of the US \$870,169 approved so far, US \$870,169 (100 per cent) had been disbursed.

Implementation plan for the third tranche of stage

8. The following activities will be implemented between June 2024 and December 2025:
- (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 4,734 mt for 2024, with 66.271 mt of HFC-23 by-product generated and subsequently destroyed (US \$264,150); and
 - (b) Monitoring and verification of destruction, including an independent verification report (US \$24,500).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Progress report on the implementation of the second tranche

9. Quimobásicos continued to manage its production of HCFC-22 in such a manner as to ensure the by-product generation rate in 2023 was 1.48 per cent, which is below the enterprise's historic by-product generation rate of 1.57 per cent, and below that experienced in many other countries, reflecting the excellent controls and operations of the enterprise. While the enterprise's 2023 by-product generation rate was low by international standards, it was slightly higher than the 1.44 per cent achieved by the enterprise in 2022. UNIDO clarified that this slight increase in the by-product generation rate was likely due to process variations, which 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.

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 92nd meeting, Quimobásicos used PDU-1 to destroy 57 mt of HCFCs and HFCs.

11. At the 92nd meeting Quimobásicos had indicated that there were no fugitive emissions of HFC-23 from when HFC-23 was generated up to HFC-23 destruction as the production process is a closed system; and since the most common source of fugitive emissions in fluorochemical production plants are the compressors shafts, Quimobásicos has a policy to use a special coating on the shafts, which are recoated on an annual basis as preventive maintenance to prevent any fugitive emissions. The Secretariat noted the information in the verification report on HCFC-22 losses, which were due to losses associated with the filling station, reinforcing that the HCFC-22 production process is a closed system with insignificant losses during the production process. Through UNIDO, Quimobásicos reaffirmed that there were no additional sources of HFC-23 leaks within the production process; that the enterprise implements rigorous measures to ensure the integrity of its production system, including meticulous attention to all potential leak points, such as compressor shafts and flanges, which undergo a strict tightening process using specialized equipment to prevent any emissions. Quimobásicos' proactive approach to maintenance and leak prevention

is designed to uphold the highest standards of environmental protection, reflecting the enterprise's commitment to continuously improve and prevent deleterious environmental impacts.

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.

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 third tranche was adjusted to US \$270,050 based on the 2023 by-product generation rate (1.48 per cent), the HCFC-22 produced (4,428 mt), and the maximum eligible incremental operating costs of US \$332,355 specified in the Agreement.

Gender policy implementation

14. While Quimobásicos has no specific gender policy in place, policies related to workplace discrimination and equality exist and include a component on gender. The policies were considered while recruiting for the project.

Sustainability of the HCFC phase-out and assessment of risks

15. 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 refurbishment of a second PDU (PDU-1) that is used 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 HCFC-22 production by Quimobásicos would continue to be controlled and verified in the same manner after the completion of the project, including by means of policies and legislation (decision 86/96(c)(i) and (ii)). In addition, while funding from the Multilateral Fund was tied to the quantity of HFC-23 by-product destroyed, the Agreement for the project specified a maximum level of funding and incentivized a reduction in the HFC-23 by-product generation rate. The steps taken by the enterprise to ensure the optimal operation of the PDU and to minimize the HFC-23 by-product generation rate reduce the risk of HFC-23 emissions.

Conclusion

16. 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 2023 have been insignificant. All the approved funds have been disbursed.

RECOMMENDATION

17. The Fund Secretariat recommends that the Executive Committee note the progress report on the implementation of the second tranche for the control and phase-out of HFC-23 emissions project at Quimobásicos, Mexico, and further recommends blanket approval of the third tranche of the project and the corresponding 2024-2025 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 (third tranche)	270,050	18,904	UNIDO
