



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/84/39
21 November 2019

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-fourth Meeting
Montreal, 16–20 December 2019

PROJECT PROPOSAL: ARGENTINA

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

Phase-out

- HCFC phase-out management plan (stage II, second tranche) UNIDO/Italy

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Argentina

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC Phase-Out Plan (Stage II)	UNIDO (lead), Italy	79 th	50% by 2022

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2018	187.79 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2018	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22	0.23	0.25	0.00	6.60	102.28	0.00	0.00	0.00	109.36
HCFC-123	0.00	0.00	0.86	0.00	0.01	0.00	0.00	0.00	0.87
HCFC-124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCFC-141b	6.61	49.06	0.00	0.00	8.29	0.00	0.00	0.00	63.96
HCFC-141b in imported pre-blended polyols	0.00	19.94	0.00	0.00	0.00	0.00	0.00	0.00	19.94
HCFC-142b	0.00	0.89	0.00	0.00	3.39	0.00	0.00	0.00	4.28

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	400.70	Starting point for sustained aggregate reductions:	377.51
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	198.72	Remaining:	178.79

(V) BUSINESS PLAN		2019	2020	2021	Total
UNIDO	ODS phase-out (ODP tonnes)	38.01	0.0	45.05	83.06
	Funding (US \$)	3,510,449	0	4,160,214	7,670,663

(VI) PROJECT DATA		2017	2018	2019	2020	2021	2022	Total	
Montreal Protocol consumption limits		360.63	360.63	360.63	260.45	260.45	260.45	n/a	
Maximum allowable consumption (ODP tonnes)		330.58	330.58	330.58	260.45	260.45	260.45	n/a	
Agreed funding (US \$)	World Bank*	Project costs	0	0	0	0	0	0	
		Support costs	0	0	0	0	0	0	
	UNIDO	Project costs	1,553,271	0	3,280,793	0	3,888,050	969,124	9,691,238
		Support costs	108,729	0	229,656	0	272,164	67,839	678,388
	Italy	Project costs	250,000	0	0	0	0	0	250,000
		Support costs	32,500	0	0	0	0	0	32,500
Funds approved by ExCom (US \$)	Project costs	1,803,271	0		0	0	0	1,803,271	
	Support costs	141,229	0		0	0	0	141,229	
Total funds requested for approval at this meeting (US \$)	Project costs			3,280,793				3,280,793	
	Support costs			229,656				229,656	

*At the 80th meeting, all stage II activities to be implemented by the World Bank were transferred to UNIDO (decision 80/31)

Secretariat's recommendation:	Individual consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of Argentina, UNIDO as the lead implementing agency has submitted a request for funding for the second tranche of stage II of the HCFC phase-out management plan (HPMP), at the amount of US \$3,280,793, plus agency support costs of US \$229,656 for UNIDO only.¹ The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2017 to 2018, the tranche implementation plan for 2020 to 2022, and a request for extension of stage I.

Report on HCFC consumption

2. The Government of Argentina reported a consumption of 187.79 ODP tonnes of HCFC in 2018, which is 53 per cent below the HCFC baseline for compliance. The 2014-2018 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Argentina (2014-2018 Article 7 data)

HCFC	2014	2015	2016	2017	2018	Baseline
Metric tonnes						
HCFC-22	2,904.33	3,043.23	2,324.60	2,463.96	1,817.45	4,859.5
HCFC-123	77.96	111.38	109.55	162.37	46.28	74.7
HCFC-124	28.56	38.66	21.05	7.78	0.0	47.9
HCFC-141b	951.71	978.73	829.54	958.28	766.28	1,031.1
HCFC-142b	145.82	266.25	111.21	60.69	40.18	268.1
Total (mt)	4,108.38	4,438.25	3,395.95	3,653.08	2,670.19	6,281.3
ODP tonnes						
HCFC-22	159.73	167.38	127.85	135.52	99.96	267.3
HCFC-123	1.56	2.23	2.19	3.25	2.78	1.5
HCFC-124	0.63	0.85	0.46	0.17	0.0	1.0
HCFC-141b	104.69	107.66	91.25	105.41	84.29	113.4
HCFC-142b	9.48	17.31	7.23	3.94	2.61	17.5
Total (ODP tonnes)	276.09	295.42	228.99	248.29	187.79	400.7

3. The reduction in HCFC consumption in the recent years is mainly due to the successful implementation of activities under stage I and II of the HPMP, including the completion of the air-conditioning (AC) manufacturing conversions contained in stage I, and the refrigeration technician training programme. The economic slowdown being faced by the country also contributed to the low level of consumption reported in 2018.

Country programme (CP) implementation report

4. The Government of Argentina reported HCFC sector consumption data of 198.42 ODP tonnes under the 2018 CP implementation report. The difference in the consumption calculated according to Article 7 data and actual quantities used as per CP data is explained by the use of stockpiles.

Verification report

5. The verification report confirmed that the Government is implementing an effective licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs for 2017 and 2018 were 248.3 and 187.8 ODP tonnes, respectively, well below the maximum allowable consumption under the Montreal Protocol and the Agreement between the Government and the Executive Committee.

¹ As per the letter of 7 October 2019 from the Ministerio de Relaciones Exteriores y Culto of Argentina to UNIDO.

Progress report on the implementation of the first tranche of the HPMP*Legal framework*

6. Argentina has a robust web-based system to control imports and exports of ODS, pure and contained in blends. Information on imports of room AC units is also included in the ODS licensing system. The Government is creating harmonized customs codes for the controlled substances under the Kigali Amendment (HFCs and HFC-based mixtures), as well as other substances used as refrigerants (e.g. R-290 and R-600a), and it is updating the licencing system to consider additional substances. The existing legal framework for the use of flammable refrigerants is under revision as part of the enabling activities for HFC phase-down.

Manufacturing sector

7. The status of the conversion of projects in the polyurethane (PU) and extruded polystyrene (XPS) foam sectors is summarized in Table 2.

Table 2. Status of progress of the PU and XPS foam conversion projects

Project Enterprises	HCFC consumption		Funds approved (US \$)	Status
	mt	ODP tonnes		
Individual projects PU foam				
Friostar	38.92	4.28	336,050	Terms of reference (TOR) for equipment procurement were prepared and bidding started in July 2019. Contract with the supplier is expected to be issued by UNIDO by mid-November 2019
Argenpur	21.61	2.38	211,524	The enterprise has been visited by UNIDO and has applied for a loan with a local bank to co-fund the conversion
Subtotal for individual projects	60.53	6.66	547,574	
Systems houses (SH) and downstream users (DSU)				
Alkanos (16)	96.02	10.56	999,647	UNIDO has verified and confirmed the eligibility of all the local SH. Procedures for the implementation of the project were determined and HCFC-141b users were called to register in order to convert to HFO. Meetings were held with SH to determine modalities of assistance to DSU. Some SH reported that they were able to obtain HFO for testing only from some providers and expressed concern regarding the big price difference between HCFC-141b and HFO
BASF (20)*	107.98	11.88	914,955	
Dow (8)*	45.35	4.99	446,140	
Ecopur (38)	46.59	5.13	510,763	
Huntsman (28)*	92.55	10.18	962,540	
Poliresinas San Luis (12)	22.03	2.42	241,438	
Quimica del Caucho (17)	56.50	6.21	588,344	
Subtotal for SH	467.02	51.37	4,663,827	
Total for PU foam	527.55	58.03	5,211,401	
XPS foam				
Celpack	57.30	3.42	348,767	Celpack is facing economic difficulties, which has delayed the project. It has expressed interest in evaluating butane instead of CO ₂
Perfiles Revestidos				Equipment to operate with CO ₂ procured and in the process of being delivered
Total for XPS foam	57.30	3.42	348,767	

*Non-eligible systems house due to non-Article 5 ownership. Funding provided only for downstream users.

8. After the approval of stage II, the enterprise Briket (initially included in the group project to be assisted through a systems house) decided to convert to cyclopentane instead of HFO because of the lack of availability and high price of HFOs, and completed the conversion of its PU foam manufacturing line at a cost of US \$557,000 before implementation of the group project started. As Briket originally proposed to convert to HFO with an allocated funding of US \$154,493, the additional estimated cost of US \$402,507 was paid by the enterprise.

Refrigeration servicing sector

9. In 2017 and 2018, a total of 704 refrigeration technicians in nine cities received training in good practices in servicing refrigeration and air-conditioning (RAC) equipment based on low global-warming potential (GWP) refrigerants.

10. The development of a new technician certification programme has progressed with the selection of the Universidad Tecnológica Nacional (UTN) as the certification body; the procurement of tools and equipment to upgrade the training centres (e.g., 20 sets of mini bench training units, recovery units, portable hydrocarbon charging units, manifolds, brazing kits and additional tools), expected to arrive by January 2020; and the recruitment and certification of 18 trainers from different regions in the country. The trainers were certified in Italy using the REAL Alternatives 4 life learning programme² for the safe handling of flammable refrigerants. The national certification system for the safe management of flammable substances to be operated by the UTN would be the first official technician certification scheme in Argentina.

11. The trainers will replicate the courses nationally and the Oficina Programa Ozono (OPROZ) will audit the quality of the courses and subsidize 50 per cent of the course fee for each technician. In order to promote certification, the first 1,000 certified technicians will receive a tool kit for working with flammable refrigerants upon successfully completing the training course and obtaining the certification. The list of equipment and tools to be included in the kits has been prepared for bidding by UNIDO.

12. The technical assistance project to reduce refrigerant leaks in supermarkets was initiated with a workshop to identify potential participants. Subsequently, out of the 53 proposals received, 29 supermarkets with annual leak rates of over 30 per cent and differing quality of maintenance practices were selected. The project has been designed in three stages: Phase I (completed), included the development of an action plan to reduce refrigerant leaks and decrease energy consumption, based on a review of the leakage monitoring system installed in each supermarket over a 12-month period; Phase II (ongoing), which comprises quarterly follow-up visits to the supermarkets (September 2019, December 2019 and March 2020); and Phase III (July 2020), which will include a final visit to verify the monitoring system, its results and the final reports containing lessons learnt; costs incurred; reduction of refrigerant use compared to the baseline; energy savings compared to the baseline; financial savings; and resulting environment benefits. The project results will be shared with other supermarkets, commercial refrigeration servicing enterprises and independent technicians at a seminar organized by OPROZ.

Project implementation and monitoring unit (PMU)

13. The PMU has two components, one for servicing sector and one for the foam sector. Under the servicing sector component, out of the US \$20,000 allocated under the first tranche, US \$12,800 has been spent on national consultants, and US \$4,600 on local travel. Under the foam sector component, out of the US \$66,000 allocated under the first tranche, US \$49,000 has been spent on national consultants, US \$5,800 on international consultants, and US \$6,400 on travel; multiple meetings with the systems houses and visits to beneficiary enterprises were carried out, and the mechanism for the conversion of the systems houses and their downstream users was developed. Remaining funding will be disbursed in 2020.

14. In addition, monitoring of the production of HCFC-22 by FIASA for the years 2017 and 2018 was completed, for which US \$7,500 was approved. A total of US \$4,494 has been disbursed and the remaining balance will be disbursed in 2020.

² <https://www.realalternatives.eu/partners>

Level of fund disbursement

15. As of October 2019, of the US \$1,803,271 approved so far, (US \$1,553,271 for UNIDO and US \$250,000 for the Government of Italy), US \$574,133 (31.8 per cent) had been disbursed (US \$423,445 for UNIDO and US \$150,688 for the Government of Italy). The balance of US \$1,229,138 will be disbursed in 2020-2022.

Implementation plan for the second tranche of the HPMP

16. The following activities will be implemented between January 2020 and December 2022:
- (a) Individual PU and XPS foam enterprises: Completion of the conversions of Briket, Friostar and Perfiles Revestidos, and additional progress in the conversion of Argenpur and Celpack (US \$560,291);
 - (b) Umbrella project with systems houses: Signature of contracts; technology training with suppliers; procurement of thermal conductivity testers for national systems houses; tests and trials with the downstream users to begin using HFO; payment of incremental operational costs to downstream users upon approval of tests and trials (US \$1,508,785);
 - (c) Launching the UTN certification programme in the use of flammable refrigerants for servicing technicians (US \$100,000), training of an additional 2,500 refrigeration technicians in good practices, and procuring 550 tool kits for the certified technicians (US \$800,000);
 - (d) Completion of the leak minimization programme in supermarkets by July 2020; the results will be presented in a final report and a seminar for the supermarket sector (funds from the previous tranche);
 - (e) Additional activities in the refrigeration servicing sector, including procurement of a recycling machine to upgrade the reclaiming centre, and awareness activities to promote the activities being implemented in the servicing sector at RAC related events (US \$47,217);
 - (f) PMU activities: annual updates of the HCFC quota system; monitoring of HCFC-22 production by FIASA (US \$17,500); monitoring of the ongoing implementation of the conversion of PU and XPS foam enterprises (US \$146,000, including US \$108,000 for technical consultants, US \$8,000 for an international consultant, and US \$30,000 for travel); continued monitoring of activities in the refrigeration servicing sector, monitoring of the bans on import of HCFC-based domestic AC and designing and implementing regular public awareness activities (US \$100,000, including US \$30,000 on technical consultants, US \$23,200 on international consultants, US \$16,800 on programme assistance and US \$30,000 on travel).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Status of stage I of the HPMP and request for extension

17. The submission included an update on the implementation of stage I of the HPMP, indicating that issues encountered during the procurement of HCFC-141b flushing equipment to replace flushing of

refrigeration circuits with HCFC-141b with alternative solvents have been resolved. However, as the date of completion of stage I was December 2018, the Government of Argentina confirmed the need to request an extension of stage I to December 2020 to be able to complete this activity, which includes the delivery of the equipment in January 2020, distribution of equipment, associated training and six months of operation and performance testing. UNIDO also confirmed that the remaining balance of funds from stage I of the HPMP is US \$13,000, which will be used for this activity.

18. The Secretariat notes that the distribution of the HCFC-141b flushing equipment, its testing and associated training are the only outstanding activities under stage I. As the equipment has already been ordered and will be received by January 2020, the Secretariat supports the extension of stage I of the HPMP for Argentina to December 2020, on the understanding that UNIDO will provide annual reports on the status of finalization of stage I to the first meeting of the year until completion, and that the project completion report (PCR) will be submitted to the first meeting in 2021.

Progress report on the implementation of the first tranche of the HPMP

Legal framework

19. The Government of Argentina has already issued HCFC production and import quotas for 2019 and 2020 in accordance with the Montreal Protocol targets. As the targets in the Agreement between the Government and the Executive Committee are lower than those set by the Montreal Protocol for some years (i.e., 2017, 2018, 2019), the Government only allocates quotas below the maximum allowable consumption specified in the Agreement.

Manufacturing sector

Systems house project

20. The Secretariat noted that although activities in the PU and XPS foam sectors started slowly, due in part to the change of implementing agency at the 80th meeting, some of the individual conversions were close to being completed. With regard to the systems houses project, UNIDO clarified that even though there were no completed conversions yet, the systems houses' eligibility had been verified, meetings with the systems houses and downstream users to determine implementation details had been conducted, and Resolution 133/2019 by the Secretary of Industry that establishes the implementation mechanism and invites downstream users to participate in the project had been issued. Furthermore, the systems houses have already been working on developing HFO-based formulations. Once the contracts have been signed between UNIDO and each systems house (expected in early 2020), tests and trials can be undertaken and downstream users will be able to start their conversions.

21. UNIDO also confirmed that no extension in the implementation of the overall foam sector conversion was envisaged, and the Government of Argentina reaffirmed its commitment to issue the planned ban on HCFCs for the foam sector on 1 January 2022.

22. In view of the large number of downstream PU foam users (139) included in the project and the need to verify their eligibility, as done in the implementation of other foam sector plans, UNIDO will submit as part of the third tranche an updated list of the eligible downstream users that are still using HCFC-141b and will be receiving assistance from the Multilateral Fund.

Availability of alternative technology

23. The difference in price between HCFC-141b and HFOs (above US \$10/kg) and its impact on the sustainability of the conversion and potential adoption of HFCs by assisted enterprises was also discussed. UNIDO recalled the Government of Argentina, with the support of the United States of America, has

coordinated meetings with the suppliers of the technology to discuss the issue; and further, UNIDO and representatives of the Ministry of Production and Labor have held several meetings with the representatives of the suppliers in the country to raise the issue. These discussions continue with the objective to increase availability of HFOs in the country at a market price that makes the conversion sustainable.

24. The Government of Argentina is planning to organize training for the systems houses on techniques to develop efficient and cost-effective HFO formulations; it will also work with the suppliers of HFO-based systems to reach a market price that makes the conversion sustainable, while promoting a strong quota system, like the existing one for HCFCs, to prevent the adoption of HFCs.

Change of technology by Briket

25. Prior to the submission of the second tranche request to the 84th meeting, UNIDO informed the Secretariat that the PU foam enterprise Briket decided to change the HFO technology originally proposed to cyclopentane, that the enterprise converted with its own resources and agreed to cover all additional costs over those originally approved. UNIDO also asked whether the payment for the conversion at the agreed level (US \$154,493) could be disbursed to the enterprise. UNIDO provided: written confirmation to the Secretariat that the conversion had taken place in compliance with the policies of the Fund and in keeping with all UNIDO's standards for PU foam conversions; detailed information on the baseline equipment replaced (a foaming injection unit), and confirmation that it was dismantled and made unusable upon completion of the project; and acknowledgement that a safety audit was completed (a certificate was subsequently issued to the enterprise in November 2019).

26. The Secretariat noted that the change of technology was a major change in the Agreement between the Government and the Executive Committee that needed to be reported to the Committee in advance, given the potential environmental impact and additional costs of the new technology selected. Noting that the selected technology is also a low-GWP technology, that the higher cost has been covered by the enterprise, that the conversion was undertaken following all UNIDO's procedures, that the baseline equipment had been destroyed and that the enterprise required the funding urgently to repay loans taken out to co-finance the conversion, the Secretariat agreed on an exceptional basis that UNIDO could release the payment to the enterprise rather than wait until the 84th meeting. However, the Secretariat also emphasized to UNIDO the need to report in advance cases where enterprises decided to convert to a technology different from the one approved, given the potential environmental and cost implications, so that the new technology could be presented to the Executive Committee for its consideration.

Celpack

27. The XPS foam enterprise Celpack is facing economic difficulties, which have resulted in delays starting the project. In view of this, UNIDO agreed to undertake an assessment of the financial viability of the enterprise before entering into implementation, and not to engage in expenditures if there was any indication of possible bankruptcy. UNIDO will report to the 85th meeting on the results of the assessment to determine whether the enterprise could still be converted or whether the funds would be returned. UNIDO will also report on whether the technology will be changed to isobutane.

Monitoring of HCFC-22 production at FIASA

28. Noting that the financial viability of and a scenario for closure of FIASA had been considered under the project to control HFC-23 by-product emissions at the HCFC-22 production facility FIASA,³ the Secretariat notes that if the enterprise decides to close its production of HCFC-22, the balances of funds

³ UNEP/OzL.Pro/ExCom/84/71

already approved for monitoring HCFC-22 production would be returned to the Fund, and the Agreement for stage II would be amended to remove the funds approved in principle for that purpose.

Sustainability of the HCFC phase-out

29. The Government of Argentina has promulgated regulations that support the conversions in the foam and AC manufacturing sector. Upon completion of the conversion of the room AC manufacturing sector during stage I, the Government of Argentina established a ban on the import and production of room AC equipment using HCFC-22 (1 January 2013); and had committed to issue, no later than 1 January 2022, a ban on the import and use of HCFC-141b pure or contained in pre-blended polyols for the manufacture of PU foam; and a ban on the import and use of HCFC-22 and HCFC-142b for the manufacture of XPS foam.

Conclusion

30. The Government of Argentina continued to effectively implement its HCFC import and export licensing and quota system, achieving compliance with its HCFC production and consumption targets for 2017 and 2018, as corroborated by the independent verification report and the reports on monitoring of HCFC-22 production. The country has almost completed the implementation of stage I of the HPMP and requested an extension to December 2020 to complete the last ongoing activities in the servicing sector. Under stage II, Argentina has started the conversion of the PU and XPS foam sectors, with one enterprise completing its conversion and three enterprises at an advanced stage. One XPS foam enterprise facing economic difficulties will be monitored to determine whether it will participate in the HPMP. Argentina also advanced in the implementation of activities in the refrigeration servicing sector, including technician training and the development of a technician certification system for the safe management of flammable refrigerants. UNIDO disbursed 31.8 per cent of the approved funds.

RECOMMENDATION

31. The Executive Committee may wish to consider:

- (a) Noting the progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan (HPMP) in Argentina and the request for extension of stage I of the HPMP to December 2020;
- (b) Approving the extension of the duration of stage I of the HPMP to December 2020 on the understanding that no further extensions will be approved;
- (c) Requesting UNIDO and the Government of Argentina to submit progress reports on a yearly basis on the implementation of the work programme associated with stage I of the HPMP until the completion of the project, and the project completion report to the first meeting of the Executive Committee in 2021;
- (d) Requesting UNIDO:
 - (i) To submit, with the third tranche request, the updated list of downstream foam enterprises being assisted by the Multilateral Fund under stage II, including their HCFC-141b consumption phased out, subsector, baseline equipment and technology adopted;
 - (ii) To submit to the 85th meeting an update on the financial viability of the enterprise Celpack and decision on whether the enterprise will be assisted by the Multilateral Fund, on the understanding that the funds from the conversion of Celpack will be

returned to the Multilateral Fund in the event that the enterprise is removed from the project;

- (iii) To inform the Secretariat in advance of cases where enterprises decide to convert to a technology that is different from the one approved by the Executive Committee, given the environmental and cost implications, so that the new technology can be presented to the Executive Committee for its consideration; and
- (e) Approving the second tranche of stage II of the HPMP for Argentina, and the corresponding 2020-2022 tranche implementation plan, at the amount of US \$3,280,793, plus agency support costs of US \$229,656 for UNIDO.
