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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-fifth Meeting
Montreal, 25-29 May 2020
Postponed to 19-22 July 2020*

PROJECT PROPOSAL: CUBA

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

Phase-out

- HCFC phase-out management plan (stage I, fifth tranche) UNDP

* Due to coronavirus disease (COVID-19)

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.

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

CUBA

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (Stage I)	UNDP (lead)	65 th	35% by 2020

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2019	6.25 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAM SECTORAL DATA (ODP tonnes)						Year: 2019
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Total sector consumption
				Manufacturing	Servicing	
HCFC-22					6.23	6.23
HCFC-123						
HCFC-124					0.01	0.01
HCFC-141b						
HCFC-141b in imported pre-blended polyols						
HCFC-142b					0.01	0.01

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	16.88	Starting point for sustained aggregate reductions:	30.23
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	19.26	Remaining:	10.97

(V) BUSINESS PLAN		2020	Total
UNDP	ODS phase-out (ODP tonnes)	0.62	0.62
	Funding (US \$)	60,200	60,200

(VI) PROJECT DATA			2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Montreal Protocol consumption limits			n/a	n/a	16.88	16.88	15.19	15.19	15.19	15.19	15.19	10.97	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	16.88	16.88	15.19	15.19	15.19	15.19	15.19	10.97	n/a
Agreed funding (US \$)	UNDP	Project costs	750,000	0	700,000	0	0	141,527	0	100,000	0	56,000	1,747,527
		Support costs	56,250	0	52,500	0	0	10,615	0	7,500	0	4,200	131,065
Funds approved by ExCom (US \$)		Project costs	750,000	0	700,000	0	0	141,527	0	100,000	0	0	1,691,527
		Support costs	56,250	0	52,500	0	0	10,615	0	7,500	0	0	126,865
Total funds requested for approval at this meeting (US \$)		Project costs										56,000	56,000
		Support costs										4,200	4,200

Secretariat's recommendation:	For blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Cuba, UNDP as the designated implementing agency has submitted a request for funding for the fifth and final tranche of stage I of the HCFC phase-out management plan (HPMP), at the amount of US \$56,000, plus agency support costs of US \$4,200.¹ The submission includes a progress report on the implementation of the fourth tranche, the verification report on HCFC consumption for 2018 and 2019, and the tranche implementation plan for 2020 to 2021.

Report on HCFC consumption

2. The Government of Cuba reported under country programme (CP) implementation report a consumption of 6.25 ODP tonnes of HCFC in 2019, which is 63 per cent below the HCFC baseline for compliance. The 2015-2019 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Cuba (2015-2019 Article 7 data)

HCFC	2015	2016	2017	2018	2019	Baseline
Metric tonnes (mt)						
HCFC-22	239.49	229.18	173.82	177.10	113.32	259.05
HCFC-124	0.0	0.0	0.0	0.0	0.22	0.60
HCFC-141b	0.0	0.0	0.0	0.0	0.0	23.61
HCFC-142b	0.0	0.0	0.0	0.0	0.13	0.36
Total (mt)	239.49	229.18	173.82	177.10	113.67	283.62
HCFC-141b in imported pre-blended polyols*	2.00	0.0	0.0	0.0	0.0	**121.33
ODP tonnes						
HCFC-22	13.17	12.60	9.56	9.74	6.23	14.25
HCFC-124	0.0	0.0	0.0	0.0	0.01	0.01
HCFC-141b	0.0	0.0	0.0	0.0	0.0	2.60
HCFC-142b	0.0	0.0	0.0	0.0	0.01	0.02
Total (ODP tonnes)	13.17	12.60	9.56	9.74	6.25	16.88
HCFC-141b in imported pre-blended polyols*	0.22	0.0	0.0	0.0	0.0	**13.35

*Country programme data.

**Average consumption between 2007 and 2009.

3. Consumption of HCFC-22 has been decreasing during the last five years due to the implementation of the HPMP (i.e., establishment of the licensing and quota system, activities implemented in the refrigeration servicing sector), introduction of non-HCFC-based equipment, and an economic slowdown with limited availability and access to consumer goods, including refrigerant gases. The slight increase in the consumption of HCFC-22 in 2018 was due to high activity in the tourism sector, which required additional refrigerant for hotels and related industries. The trend of decreasing consumption will continue, so it is expected that the country will sustainably comply with the agreed reduction commitments.

4. The small amounts of HCFC-124 and HCFC-142b consumed in 2019 are associated with imports of R-409A.² Imports of HCFC-141b in pre-blended polyols for the manufacture of polyurethane (PU) foams have been banned since 1 January 2016.

¹ As per the letter of 12 March 2020 from the Ministry of Science, Technology and Environment of Cuba to UNDP.

² R-409A is a blend consisting of 15 per cent of HCFC-142b, 60 per cent of HCFC-22 and 25 per cent of HCFC-124.

CP implementation report

5. The Government of Cuba reported HCFC sector consumption data under the 2019 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

Verification report

6. Prior to the submission of the fifth funding tranche of the HPMP, the verification on HCFC consumption for 2018 to 2019 was being conducted; however, due to contingencies associated with the COVID-19 pandemic, the mission to the country could not take place. Nonetheless, the independent verifier was able to discuss, via videoconference, with key officers in the Government; the verifier had also access to all documentation related to legislation, procedures for ODS imports and exports, consumption quotas, lists of importers and the Customs Office database of imports and exports of ODS. This approach allowed for an adequate review of the ODS import licensing system, cross-checking of license and quota data with actual imports for 2018 and 2019, and completion of the verification before the issuance of the document.

7. The verification concluded that for 2018 and 2019, the Government was in compliance with the Montreal Protocol and the HCFC consumption targets set out in its Agreement with the Executive Committee, that the consumption levels reported for those years under the Article 7 and the CP implementation report (as indicated in Table 1) showed no discrepancies with the actual imports data recorded by customs, and that the national licensing and quota system for HCFC imports was fully consolidated. The verifier recommended to continue training customs officers to improve knowledge on ODS imports and to establish a criterion for monitoring substances that have been phased out (e.g., CFCs, HCFC-141b) to ensure that they will not enter the country in either pure or mixed form. UNDP confirmed that the Government of Cuba was working to follow the recommendations made by the verification.

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

Legal framework

8. The Government of Cuba continued to implement an enforceable national system of licensing and quotas for controlling HCFC imports, production and exports. A ban on imports of HCFC-141b in bulk was established on 1 January 2014, and on imports of HCFC-141b contained in pre-blended polyols on 1 January 2016. Cuba has also had a ban on the import of HCFC-based equipment since 2015. Trade in CFC is completely banned and there is no evidence of the use of banned substances in the country, nor are there any identified stocks of phased-out ODS.

9. On 1 January 2020, the Government of Cuba ratified the Kigali Amendment. The national norm on control of HCFCs was updated with actions for the control of HFCs and safety measures in the use of alternative substances. Currently, all personnel working in the refrigeration and air-conditioning (RAC) sector must complete the course on good practices in centers accredited by the Ozone Technical Office (OTOZ) and the Ministry of Education.

10. A total of 32 customs officers were trained in the implementation of the Montreal Protocol, the legal framework to control ODS, and control procedures to prevent illegal trade of ODS. Controls related to the implementation of the Montreal Protocol are now part of the instruction that new customs officers receive at the national school of customs training (Escuela Nacional de Formación Aduanera).

Manufacturing sector

11. Stage I of the HPMP included the conversion of five PU foam enterprises manufacturing panels and insulation foam in commercial refrigeration equipment with a total consumption of 13.35 ODP tonnes (121.33 mt) of HCFC-141b contained in imported pre-blended polyols. The three largest enterprises

(Refrigeracion Caribe, Lancomet and INPUD) selected cyclopentane as the replacement technology; the conversions have been completed. The remaining two small enterprises (Friarc and IDA) selected water-blown as the alternative technology; however, due to its poor performance, they are temporarily using HFC-365mfc and HFC-227ea.³

Refrigeration servicing sector

12. The following activities were implemented:

- (a) One train-the-trainer workshop was held for 32 instructors of the course on good practices in refrigeration and alternative technologies;
- (b) Training and certification of 1,521 (927 in 2018 and 594 in 2019) specialists, technicians and mechanics took place in 62 advanced courses on good RAC practices organized in 16 locations across the country;
- (c) Continued technical assistance for the introduction of alternative refrigerants was provided through the procurement of two R-290-based cold rooms, seven R-600a-based refrigeration units and two R-290 air-conditioning split units to train local technicians on the safe use of flammable refrigerants in the commercial RAC sector; and
- (d) A technical advisory group composed of 14 specialized technicians attended two industry events in Germany and one in Spain and subsequently presented their findings to the sector in four meetings.

Project implementation and monitoring

13. Project implementation and monitoring are coordinated by OTOZ, where technical specialists support the implementation of each of the project components. The expenditures related to project monitoring and implementation were US \$6,490, including travel (US \$4,468), workshops and meetings (US \$1,357) and other expenditures (US \$665).

Level of fund disbursement

14. As of March 2020, of the US \$1,691,527 approved so far, US \$1,560,137 had been disbursed by UNDP, as shown in Table 2. The balance of US \$131,390 will be disbursed in 2020-2021.

Table 2. Financial report of stage I of the HPMP for Cuba (US \$)

Tranche	Funds approved	Funds disbursed	Disbursement rate (%)
First, second and third	1,591,527	1,476,816	93
Fourth	100,000	83,321	83
Total	1,691,527	1,560,137	92

³ This issue has been reported at each meeting since the 77th meeting: UNDP was requested *inter alia* to continue assisting the Government in securing the supply of low-GWP technology and to report on the status of the use of interim technology at each meeting, until a low-GWP technology had been fully introduced and the enterprises had been converted (decision 77/50(b)), along with a detailed analysis of the incremental capital and operational costs in the event of use of a technology other than that selected when the project was approved and an update from the suppliers on the progress made towards ensuring that the selected technologies, including associated components, were available on a commercial basis in the country (decision 81/10(b)).

Implementation plan for the fifth and final tranche of the HPMP

15. The following activities will be implemented between July 2020 and December 2021:
- (a) Finalizing the conversion of one production line at IDA and one at Friarc to low-global-warming-potential (GWP) alternatives, and payment of incremental operating costs (funds from previous tranche);
 - (b) Training of an additional 30 customs officers at the national customs school on the legal framework to control ODS and control procedures to prevent illegal trade of ODS; and designing and printing of public awareness and environmental education materials including technical factsheets on low-GWP alternative refrigerants and reproduction of good refrigeration practices manuals (funds from previous tranche);
 - (c) Training of an additional 355 technicians on good refrigeration practices and safe handling of low-GWP refrigerants (US \$25,872);
 - (d) Installation of 26 RAC systems based on low-GWP refrigerants for demonstration and training purposes (US \$21,491);
 - (e) Attendance at two national workshops on HCFC alternatives and an international fair on RAC in Italy (September 2020) with the purpose of examining the status of alternative low-GWP refrigerants (US \$7,637); and
 - (f) Project implementation and monitoring (US \$1,000), including travel (US \$700), workshops and meetings (US \$200) and other expenditures (US \$100).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

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

Legal framework

16. The Government of Cuba has already issued an HCFC import quota for 2020 at 8.80 ODP tonnes (160 mt), which is 20 per cent below the compliance level of 10.97 ODP tonnes under the Montreal Protocol.

Manufacturing sector

17. Since the submission of the last progress report, the following activities were undertaken to assist Friarc and IDA, which had received assistance to convert to water-blown technology but were using a blend of HFCs on a temporary basis:

- (a) The two enterprises undertook trials and tests using HFO-based systems, but encountered technical and commercial difficulties (i.e., degradation of the system's catalyst after four months in the system; in addition, samples of HFO-based systems could not be imported into the country);⁴
- (b) Subsequently, the enterprises undertook trials and tests using new water-based PU systems

⁴ The issue is described in paragraphs 15 and 16 of document UNEP/OzL.Pro/ExCom/84/22.

(different than the water-based systems tested at the beginning of the project) with satisfactory initial results. Additional tests to measure foam properties are now being conducted for both enterprises; and

- (c) The enterprises are procuring water-based PU systems for an initial batch of production of insulation foam for freezers and refrigerated medicine containers for additional testing. The performance of the insulation foam will be measured before the water-blown systems can be used commercially.

18. UNDP explained that the new water-based PU system formulations have improved in the last five years, which could have led to their improved performance. Given the positive results obtained in the tests with new water-based PU systems, and that one of the world's leading suppliers can provide these formulations, the Secretariat enquired whether both enterprises could convert their production lines to this technology (as this was the technology approved by the project). UNDP reported that it was likely, although the formulations being procured were still for testing in the field; based on the results of the performance of the foam, it would be possible to adopt the technology and complete the conversion of the two enterprises before the end of stage I. UNDP will continue reporting on the progress on this issue.

Refrigeration servicing sector

19. Noting that during the implementation period of the fourth tranche, an additional 1,521 technicians were trained and certified, the Secretariat asked how many technicians there were in the country and how many of them were scheduled to receive training and certification during stage I of the HPMP. UNDP informed that the last estimation, made in 2012, indicated that there were more than 6,000 technicians, of which stage I of the HPMP originally aimed to train 4,600. At present, 4,604 technicians have already received training during stage I and it is expected that additional 355 will be trained during the last tranche.

20. During the discussion of the fourth tranche, following concerns raised by the Secretariat, UNDP confirmed that since the fourth funding tranche the Government of Cuba had committed not to convert any other HCFC-22-based RAC equipment to R-404A or to any other high-GWP- or flammable refrigerants. With the funding allocated under the fourth tranche (US \$35,000), the Government promoted the introduction of low-GWP alternatives in the commercial refrigeration sector (e.g., workshops, acquisition of a limited number of new HC-based commercial refrigeration units, visits to cold rooms using HC refrigerants in the region). In order to continue promoting and facilitating the introduction of low-GWP technologies, the following activities will be implemented during the fifth tranche: one train-the-trainers workshop and strengthening of the good servicing practices programme to include the safe handling of flammable refrigerants; and the installation of 26 low-GWP RAC systems for demonstration and training purposes, mainly based on HCs.

Gender policy implementation⁵

21. UNDP reported that, initiating actions on gender mainstreaming, OTOZ would monitor, report, and raise awareness in the following ways:

- (a) Monitoring: collect data to produce gender-disaggregated indicators;
- (b) Reporting: show the disaggregated figures; introduce gender considerations in training sessions and training materials; collect data to establish an ex-post baseline of women technicians in the RAC sector and compare it with the number of women involved in OTOZ

⁵ Decision 84/92(d) requested bilateral and implementing agencies to apply the operational policy on gender mainstreaming throughout the project cycle.

activities for the sector; and

- (c) Awareness-raising: introduce gender-sensitive language into communications; incorporate gender aspects in the recruitment of new staff to OTOZ; consider adding a gender-related element in each job description; and ensure that monitoring and evaluation consultants and project personnel have the required competences to incorporate gender considerations at all stages of their work.

Sustainability of the HCFC phase-out

22. The ban on imports of HCFC-141b in pre-blended polyols for the manufacture of PU foam, in force since 1 January 2016, supports the long-term sustainability of the conversion of the PU foam sector. OTOZ has worked closely with the Ministry of Education to incorporate information related to the Montreal Protocol and the protection of the ozone layer in the curricular framework of customs officers and refrigeration technicians. Accordingly, controls related to the implementation of the Montreal Protocol are already part of the instruction that new customs officers received in the national school of customs training; and good refrigeration practices are also included in the technical-professional course on RAC offered in the provincial schools, where the 16 classrooms supported by the project are located.

Date of completion of stage I of the HPMP

23. UNDP indicated that stage I of the HPMP for Cuba will be completed by December 2021 as established in the Agreement.

Conclusion

24. The Government of Cuba continues to be in compliance with the Montreal Protocol and its Agreement with the Executive Committee. Thirty-two additional customs officers and 1,512 refrigeration technicians were trained. The results of trials and testing of a low-GWP alternative blowing agent in two PU foam enterprises that were temporarily using HFCs are promising; additional testing will be conducted and reporting on the status of implementation will continue until a low-GWP technology is fully introduced. The overall disbursement rate is 92 per cent. The operational import licensing and quota system, the ban on imports of HCFC-141b pure and contained in pre-blended polyols, and the activities being implemented in the refrigeration servicing sector will enable the country to maintain compliance with the commitments under its Agreement with the Executive Committee.

RECOMMENDATION

25. The Fund Secretariat recommends that the Executive Committee:

- (a) Takes note of:
 - (i) The progress report on the implementation of the fourth tranche of stage I of the HCFC phase-out management plan (HPMP) in Cuba;
 - (ii) The report provided by UNDP and, with appreciation, the efforts made to facilitate the supply of technology with low global-warming potential (GWP) to the enterprises Friarc and IDA, funded under stage I of the HPMP for Cuba; and
- (b) Requests UNDP to continue assisting the Government of Cuba in securing the supply of low-GWP alternative technology and to provide, to the 86th meeting, a report on the status of the conversion of the two enterprises mentioned in sub-paragraph (a)(ii), including, in the event of use of a technology other than that selected when the project was approved, a

detailed analysis of the incremental capital and operating costs, along with an update from the suppliers on the progress made towards ensuring that the selected technologies, including associated components, were available on a commercial basis in the country.

26. The Fund Secretariat further recommends blanket approval of the fifth and final tranche of stage I of the HPMP for Cuba, and the corresponding 2020-2021 tranche implementation plan, at the funding level shown in the table below.

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, fifth tranche)	56,000	4,200	UNDP