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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-second Meeting
Montreal, 3-7 December 2018

PROJECT PROPOSAL: PANAMA

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) UNDP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS**Panama**

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (Stage II)	UNDP	76 th	35% by 2020

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2017	16.53 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)									Year: 2017
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22	0.00	0.00	0.00	0.00	16.51	0.00	0.00	0.00	16.51
HCFC-123	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01
HCFC-124	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCFC-141b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCFC-141b in imported pre-blended polyols	0.00	6.67	0.00	0.00	0.00	0.00	0.00	0.00	6.67
HCFC-142b	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(IV) CONSUMPTION DATA (ODP tonnes)			
2009-2010 baseline:	24.80	Starting point for sustained aggregate reductions:	27.28
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	13.89	Remaining:	13.39

(V) BUSINESS PLAN		2018	2019	2020	Total
UNDP	ODS phase-out (ODP tonnes)	4.86	0.00	0.92	5.78
	Funding (US \$)	412,806	0.00	77,847	490,653

(VI) PROJECT DATA			2016	2017	2018	2019	2020	Total
Montreal Protocol consumption limits			22.30	22.30	22.30	22.30	16.11	n/a
Maximum allowable consumption (ODP tonnes)			22.30	22.30	22.30	22.30	16.11	n/a
Agreed funding (US \$)	UNDP	Project costs	265,100	0	385,800	0	72,754	723,654
		Support costs	18,557	0	27,006	0	5,093	50,656
Funds approved by ExCom (US \$)	UNDP	Project costs	265,100					265,100
		Support costs	18,557					18,557
Total funds requested for approval at this meeting (US \$)	UNDP	Project costs			385,800			385,800
		Support costs			27,006			27,006

Secretariat's recommendation	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Panama, UNDP as the designated 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 \$385,800, plus agency support costs of US \$27,006.¹ The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2015 to 2017 and the tranche implementation plan for 2019 to 2020.

Status of stage I

2. In line with decision 81/29, UNDP submitted the project completion report of stage I of the HPMP, which confirms finalization of the stage. UNEP also informed the Secretariat that there is an estimated balance of US \$3,881 from the UNEP component, which will be returned to the Fund upon confirmation of the value during the financial closure of the project.

Report on HCFC consumption

3. The Government of Panama reported a consumption of 16.53 ODP tonnes of HCFC in 2017, which is 33 per cent below the HCFC baseline for compliance. The 2013-2017 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Panama (2013-2017 Article 7 data)

HCFC	2013	2014	2015	2016	2017	Baseline
Metric tonnes						
HCFC-22	350.76	348.60	318.13	332.04	300.27	404.32
HCFC-123	2.42	0.74	1.46	4.5	0.53	2.37
HCFC-124	0.10	0.09	0.071	0.00	0.00	0.45
HCFC-141b	18.41	0.00	0.00	0.00	0.00	20.87
HCFC-142b	0.05	0.52	0.043	0.00	0.00	2.72
Total (mt)	371.74	349.95	319.70	336.54	300.80	430.66
HCFC-141b in imported pre-blended polyols*	66.43	71.15	79.38	41.35	60.62	22.72**
ODP tonnes						
HCFC-22	19.30	19.18	17.50	18.26	16.51	22.24
HCFC-123	0.05	0.01	0.03	0.09	0.01	0.05
HCFC-124	0.00	0.00	0.00	0.00	0.00	0.01
HCFC-141b	2.02	0.00	0.00	0.00	0.00	2.30
HCFC-142b	0.00	0.03	0.00	0.00	0.00	0.18
Total (ODP tonnes)	21.37	19.22	17.53	18.35	16.53	24.77
HCFC-141b in imported pre-blended polyols*	7.31	7.83	8.73	4.55	6.67	2.50**

*Country programme data.

**Average consumption between 2007 and 2009.

4. The sustained reduction in HCFC consumption is due to control measures imposed on ODS imports including the quota system, and the activities conducted under the HPMP, including the ban on imports of HCFC-141b in pure form as of 1 January 2014, and the ban on new HCFC-22-based air-conditioning installations as of 1 January 2016.

5. The decrease in imports of HCFC-141b contained in imported pre-blended polyols in 2016 was due to the use of stocks that were available at the largest non-eligible consumer enterprise, Huurre Panama.

¹ As per the letter of 27 August 2018 from the Ministry of Health of Panama to UNDP.

The enterprise is expected to convert to cyclopentane with its own resources before 2020, when the ban on imports of HCFC-141b contained in pre-blended polyols enters into force.

Country programme (CP) implementation report

6. The Government of Panama reported HCFC sector consumption data under the 2017 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

Verification report

7. The verification report confirmed that the Government is implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs for 2017 was 16.53 ODP tonnes. The verification concluded that Panama met the ODS consumption target for the years 2015-2017 agreed to in stage II of the HPMP; and that its total HCFC consumption was below the authorized import quota of 22.30 ODP tonnes.

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

Legal framework

8. The Government is currently finalizing a set of regulations including:

- (a) A ban on the use of HCFC-22 as a cleaning agent in refrigeration and air-conditioning systems and in the production of extruded polystyrene (XPS) foam, both in existing and new facilities as of 1 January 2019;
- (b) A ban on imports of formulated polyols containing HCFC-141b as of 1 January 2020; and
- (c) Measures to prevent imports of products being converted under the HPMP that were manufactured with HCFC-141b in the Colon Free Trade Zone (FTZ) as of 1 January 2020.

9. In December 2017, the Government approved regulations that established the minimum level of energy efficiency for air conditioners and that defined labeling requirements for public information.

10. As part of an effort to strengthen the ODS control mechanisms of the FTZ, the Government held three meetings and one workshop with the authorities of the FTZ and the foam systems house Synthesia Panama. With full foreign ownership, Synthesia is one of the few systems houses in the region offering HFO-based systems. The Government and UNDP maintain regular communication with Synthesia, but so far they have not been able to obtain the systems house's data on imports and exports of HCFC-141b pure and contained in pre-blended polyols. The designation of a focal point was requested to improve communication between the National Ozone Unit (NOU) and the FTZ.

11. In addition, the NOU organized awareness activities for public and private stakeholders on the commitments to the Montreal Protocol, the HCFC phase-out strategy, new technological options, the Kigali Amendment, and the updated regulatory framework.

Polyurethane (PU) foam manufacturing sector

12. Out of the five PU foam sector enterprises included in stage II to phase out 1.19 ODP tonnes, two (Fibropinturas and Cangas Trucks) have signed contracts for the phase-out of 0.63 ODP tonnes of HCFC-141b in the manufacturing of rigid PU foam and prepared a plan for tests with formulations based on HFO as a foaming agent. One enterprise is currently reviewing documentation prior to signing the

contract, and the other two are evaluating technological options before signing their contracts for the conversion project.

13. UNDP conducted a technical workshop to discuss the available alternatives to the use of HCFC-141b in the manufacture of PU foam with 20 participants from the industry, including the systems house in the FTZ, and from the public sector. Its results included a better understanding of international blowing agents market trends and an increased awareness of HFO as a viable alternative to HCFC-141b.

Refrigeration servicing sector

14. The national training center (National Institute for Professional Training for Human Development (INADEH)) has included good servicing practices in its refrigeration and air-conditioning courses and has trained 78 technicians. A train-the-trainer course on natural refrigerants and international safety standards was held with over 25 instructors participating. Technical specifications for the purchase of five basic tool kits for training on natural refrigerants for technicians are currently under review. A potential university course on refrigerant management for engineering students, developed by ASHRAE² and UNEP, is being evaluated at the Technological University of Panama (UTP). The NOU and INADEH reviewed several competency-based certification schemes for refrigeration technicians in the region as reference for the establishment of a certification scheme in Panama.

15. The NOU has also conducted field trips for technicians to visit refrigeration and air-conditioning installations in the supermarket sector operating with low-GWP refrigerants (e.g. ammonia and subcritical CO₂) in order to promote the use of alternatives.

Project implementation and monitoring

16. One consultant was hired to implement the HPMP, and one was commissioned to prepare the HCFC consumption verification report. Project coordination and management of the HPMP is supervised by the NOU.

Level of fund disbursement

17. As of August 2018, of the US \$265,100 approved so far, US \$73,337 (28 per cent) had been disbursed. The balance of US \$191,763 will be disbursed in 2019 and 2020.

Implementation plan for the second tranche of the HPMP

18. The following activities will be implemented between January 2019 and December 2020:
- (a) Review and update of the HCFC legal framework including the license and quota system, and continuation of the consultation process on regulations to manage natural refrigerants (US \$22,534);
 - (b) Finalizing the process of updating regulations and training of 75 customs officers on updated regulations and import procedures for HCFCs and HCFC-based equipment, development of educational materials and delivery of two refrigerant identifiers (US \$44,533);
 - (c) Continuing the conversion in the PU foam manufacturing sector (funds from the first tranche);

² American Society of Heating, Refrigerating and Air-Conditioning Engineers.

- (d) Training in good refrigeration practices and management of alternative refrigerants for 250 technicians; preparation of a handbook on natural refrigerant management; and production of promotional material (posters, brochures, technical sheets) (US \$64,210);
- (e) Provision of basic refrigeration and air-conditioning equipment and tools (to be determined based on needs) to 10 technical training centers and 75 service workshops; and continued inclusion of technician-training subjects in the academic curriculum of training centers (US \$130,024);
- (f) Two training seminars to promote good practices, leak reduction, and the use of low-GWP alternatives (e.g., ammonia and CO₂) in supermarkets and food processing plants; and design and printing of 250 related technical brochures (US \$29,488);
- (g) Development of the university course and of the legal and organizational aspects of the refrigeration and air-conditioning technician certification scheme in consultation with the Panamanian Society of Engineers and Architects (SPIA) and other institutions (US \$38,978);
- (h) Awareness raising activities, including two annual workshops for end users and government decision makers, and production of related material on all issues related to HCFC phase-out (US \$28,033); and
- (i) Project monitoring and operational implementation of the stage II activities and trials of HFO-based systems (US \$28,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

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

Legal framework

19. The Government of Panama has already issued HCFC import quotas for 2018 at a level of 17.77 ODP tonnes, which is lower than the Montreal Protocol control target of 22.30 ODP tonnes. Imports of HCFC-141b contained in pre-blended polyols are controlled through pre-authorization by the Ministry of Health (MINSA), through the NOU. So far, the country has not established maximum limits for the years before the ban scheduled for 1 January 2020.

20. Regarding the reason for the ban on the use of HCFC-22 in flushing and the ban on new HCFC-based XPS foam manufacturing capacity to take place on 1 January 2019, rather than 1 January 2018 as per the original commitment, UNDP explained that MINSA's legal department recommended that all legal measures related to banning specific HCFC substances be included in a single legal instrument for the sake of efficiency. Accordingly, the decree containing the bans has been drafted, the due consultation process has been completed, and the decree is now awaiting final approval and publication. Thus, the above-mentioned bans will enter into force on 1 January 2019, and the ban on imports of HCFC-141b contained in imported pre-blended polyols will enter into force on 1 January 2020. The Government of Panama confirmed through UNDP that the revised dates are final.

Issues related to the FTZ

21. Noting with appreciation the efforts on the part of the Government of Panama to strengthen control mechanisms for ODS in the FTZ, the Secretariat followed up on the collection of data on import and export of HCFCs and products containing HCFCs from the FTZ. UNDP explained that access to the FTZ's on-line data system by the NOU is currently being discussed. Once the HCFC import and export data becomes available, it will be revised and cross-checked with Panama's customs HCFC consumption data.

22. The Secretariat raised a concern about challenges for the implementation of the PU foam projects in Panama and other countries in the region, as Synthesia continues supplying low-cost HCFC-141b or high-GWP HFCs contained in pre-blended polyols. UNDP explained that, further to discussions with Synthesia and the authorities in the FTZ, it has been determined that the main obstacle is the limited availability and high cost of HFO-based PU systems, stemming from the supply of low-cost HCFC-141b or high-GWP HFCs contained in pre-blended polyols from Synthesia. Even though the systems house is currently promoting the adoption of HFO as blowing agent by supporting field tests in the region, the supply of lower-cost, high-GWP HFC systems remains a concern, as they compete directly with the costlier, HFO-based systems.

PU foam manufacturing sector

23. Noting that only two out of five PU foam enterprises have started their projects, UNDP reassured the Secretariat that the progress achieved so far is in line with the planning, as this activity was expected to start by the end of the first tranche. UNDP has agreed on the implementation modality with the NOU, held meetings with the enterprises to explain the implementation process, and conducted workshops on PU foam alternatives and on the scope of the project. It is expected that all conversions will be concluded in the second half of 2019, in line with the entry into force of the ban on the use of HCFC-141b contained in imported pre-blended polyols.

24. The main supplier of HFO-based systems to the country will most likely be Synthesia, who already has the technology developed and available for the local market. Other enterprises have also shown interest, including systems houses in Colombia and China.

Refrigeration servicing sector

25. In providing more information on the institutions, regulations and procedures involved in the scheme for the certification of technicians, UNDP explained that a formal certification system is pending the consultation process with INADEH, the Ministry of Education (MEDUCA), the UTP, Technical Board of Engineering and Architecture, MINSAs, and technicians' representatives. It is not yet known whether the technician's certification will be linked to a regulation, whether it will be mandatory or voluntary, or whether it will be required for the installation of refrigeration and air-conditioning equipment. More information is expected to be available at the time of submission of the next tranche request.

Conclusion

26. Panama continues to be in compliance with the Montreal Protocol and the HCFC consumption targets defined in its Agreement with the Executive Committee. HCFC consumption in 2017 was 33.3 per cent below the HCFC consumption baseline and 25.8 per cent below the limit established in the Agreement. Under the first tranche of stage II, two PU foam enterprises signed their contracts to start conversion to HFO technology; the Government prepared bans on the use of HCFC-22 as a cleaning agent in refrigeration and air-conditioning systems (1 January 2019), on the production of XPS foam, both in existing and new facilities (1 January 2019), and on imports of formulated polyols containing HCFC-141b (1 January 2020). The Government has also established contact with the authorities of the Colon FTZ and

the enterprise Synthesia to strengthen ODS control mechanisms in the FTZ, and is progressing in establishing a technicians' certification scheme. The level of disbursement is above 20 per cent.

RECOMMENDATION

27. The Fund Secretariat recommends that the Executive Committee:

- (a) Take note of the progress report on the implementation of the second tranche of stage II of the HCFC phase-out management plan (HPMP) for Panama;
- (b) Request UNDP and the Government of Panama to continue reporting at the time of submission of the remaining tranche requests for stage II of the HPMP on:
 - (i) The status of the Government's efforts to obtain data from the systems house in the Free Trade Zone;
 - (ii) The status of the Government's efforts to obtain information on HCFCs imported to and exported from the Free Trade Zone; and
- (c) Request UNEP to return at the 83rd meeting any remaining balances approved under stage I of the HPMP.

28. The Fund Secretariat further recommends blanket approval of the second tranche of stage II of the HPMP for Panama, and the corresponding 2019-2020 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 II, second tranche)	385,800	27,006	UNDP