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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-fourth Meeting
Montreal, 18-22 May 2015

PROJECT PROPOSAL: PARAGUAY

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, second tranche)

UNDP/UNEP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Paraguay

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (Stage I)	UNDP, UNEP (lead)	63 rd	35% by 2020

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2013	16.46 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2014	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123			0.1						0.1
HCFC-124									
HCFC-141b					0.2				0.2
HCFC-141b in Imported Pre-blended Polyol		4.1							4.1
HCFC-142b									
HCFC-22					17.6				17.6

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	18.0	Starting point for sustained aggregate reductions:	19.31
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	6.28	Remaining:	13.03

(V) BUSINESS PLAN		2015	2016	2017	2018	2019	2020	Total
UNDP	ODS phase-out (ODP tonnes)	1.3	0.0	0.0	0.0	0.0	0.0	1.3
	Funding (US \$)	141,362	0	0	0	0	0	141,362
UNEP	ODS phase-out (ODP tonnes)	1.2					0.6	1.8
	Funding (US \$)	136,165					71,190	207,355

(VI) PROJECT DATA			2011	2012	2013	2014	2015-2019	2020	Total
Montreal Protocol consumption limits			n/a	n/a	18.0	18.0	16.1	11.7	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	17.95	17.95	16.16	11.67	n/a
Agreed funding (US\$)	UNDP	Project costs	168,500				131,500		300,000
		Support costs	12,638				9,862		22,500
	UNEP	Project costs	146,500				120,500	63,000	330,000
		Support costs	19,045				15,665	8,190	42,900
Funds approved by ExCom (US\$)	Project costs		315,000	0	0	0	0.0	0.0	315,000
	Support costs		31,683	0	0	0	0.0	0.0	31,683
Total funds requested for approval at this meeting (US\$)	Project costs						252,000		252,000
	Support costs						25,527		25,527

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Paraguay, UNEP as the lead implementing agency, has submitted to the 74th meeting a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP), at a total cost of US \$277,527, consisting of US \$120,500, plus agency support costs of US \$15,665 for UNEP, and US \$131,500 plus agency support costs of US \$9,862 for UNDP. The submission includes a progress report on the implementation of the first tranche and the tranche implementation plan for 2015 to 2019.

Report on HCFC consumption

HCFC consumption

2. The Government of Paraguay reported a consumption of 16.46 ODP tonnes of HCFC in 2013 and a consumption of 17.84 ODP tonnes in 2014, which are below the allowable consumption of 18.00 ODP tonnes. The 2010-2014 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Paraguay (2010-2014 Article 7 data)

HCFC	2010	2011	2012	2013	2014*	Baseline
Metric tonnes						
HCFC-22	352.74	267.77	506.61	278.37	320.16	296.0
HCFC-123	8.54	4.54	5.18	10.36	2.77	15.9
HCFC-124	3.79	1.67	13.52	4.92	0	7.0
HCFC-141b	1.00	7.50	0.00	5.38	1.50	0.5
HCFC-142b	17.60	17.47	16.38	3.76	0	20.4
Sub-total (mt)	383.67	298.95	541.69	302.79	324.43	339.8
HCFC-141b in imported pre-blended polyols*	13.72	15.72	29.54	22.54	37.10	12.7**
ODP tonnes						
HCFC-22	19.40	14.72	27.87	15.31	17.61	16.3
HCFC-123	0.17	0.09	0.10	0.20	0.06	0.2
HCFC-124	0.08	0.04	0.30	0.11	0	0.1
HCFC-141b	0.11	0.83	0.00	0.60	0.17	0.1
HCFC-142b	1.14	1.14	1.06	0.24	0	1.3
Sub-total (ODP tonnes)	20.9	16.82	29.33	16.46	17.84	18.0
HCFC-141b in imported pre-blended polyols*	1.51	1.73	3.25	2.48	4.08	1.4**

*Country programme implementation report.

**Average use between 2007 and 2009.

3. The increase in consumption of HCFC-22 in 2014 was due to provisions taken by importers and end-users to have enough stocks for servicing equipment after 2015. The Government expects that the application of the licensing system, the measures taken to ban imports of several types of HCFC-based equipment and the activities planned under the second tranche of the HPMP will result in sustained reductions in demand for HCFC-22.

4. The increase of imports of HCFC-141b contained in pre-blended polyols in 2014 was due to the polyurethane (PU) foam manufacturing sector taking provisions for lack of availability of this substance in the future. Imports are expected to decrease as systems houses in Brazil and other countries in the region phase out HCFC-141b-based polyols.

Country programme (CP) implementation report

5. The Government of Paraguay reported sector HCFC consumption data under the 2013 CP implementation report which is consistent with the data reported under Article 7. The 2014 CP report was also submitted.

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

Legal framework

6. The HCFC import and export licensing system, in operation since 2008, was adjusted to comply with the maximum allowable consumption as per the Agreement between the Government and the Executive Committee. The Secretariat of the Environment of Paraguay (SEAM) regulated the procedures for issuing HCFC licenses and established an electronic licensing system.

7. In addition, the Government of Paraguay established a gradual ban on imports of HCFC-based air-conditioners as follows: starting 1 March 2015 for units up to 24,000 British thermal units (BTU¹), 1 June 2015 for units up to 60,000 BTUs, and 1 September 2015 for units above 60,000 BTUs.

8. An agreement was reached with relevant authorities to adjust the customs tariff system in order to open special customs codes for blended refrigerants. The revised HCFC codes and a customs code for classification of HCFC-based equipment were introduced in the on-line system. Enforcement activities were also undertaken (e.g., regular verification of HCFCs shipments by environmental inspectors of the SEAM).

9. The National Ozone Unit (NOU) also promoted several existing technical standards (e.g., handling of refrigerants, commercial equipment, and industrial systems with or without ammonia) and provided technical assistance to develop new ones (e.g., reduction on emissions of ODS and global warming gases and installation of chillers and central air-conditioning in buildings). A technical standard on CFC and HCFC-based refrigeration equipment retrofitting with hydrocarbons (HC) is currently in public consultation.

10. One hundred and fifty-five environmental law enforcement officers and 342 custom officers have received training in new HCFC-related regulations, prevention of HCFC illegal trade, and methodologies to verify imports of HCFCs and HCFC-based equipment. In addition, 15 enterprises handling ODS shipments received training on custom codes for registering imports of HCFCs and HCFC-based equipment. On-line training modules, leaflets and fact sheets on refrigerant identification were made available to relevant officers.

Manufacturing foam sector

11. Paraguay obtains its pre-blended polyols from Argentina, Brazil and Chile. UNDP is planning to prepare the plan of action for the reduction and further phase-out of HCFC-141b contained in imported pre-blended polyols.

Refrigeration servicing sector

Technical assistance and incentive programmes for refrigeration

12. Twenty trainers and 370 refrigeration technicians were trained in the new HCFC regulations, the management and environmentally safe handling of refrigerants; the proper use of service tools and recovery and recycling equipment; and the transportation and safe storage of residual refrigerants. Training was imparted through vocational training institutes that had signed agreement with the SEAM as part of the terminal phase-out management plan. One hundred and eighty-six technicians received training on retrofitting refrigeration equipment to HC technology through three technical training institutions.

¹ BTU is the amount of energy needed to cool or heat one pound of water by one degree Fahrenheit.

13. The certification scheme was launched during the HPMP implementation. Two hundred and ten technicians were certified under the “management of refrigerants used in the refrigeration and air-conditioning systems” standard by the Chamber of Refrigeration and Air-conditioning Enterprises or by the National Institute of Technology and Standards (INTN). A database of certified technicians was prepared and published. End-users will be able to identify certified technicians in any locality or municipality.

Recovery and recycling

14. The main enterprises are recovering and recycling HCFCs. Several meetings with importers and trade union associations were organized to agree on logistics arrangements for the recovery and recycling of HCFC gases at a larger scale; and the Professional Training Institute conducted courses on good service practices to demonstrate recovery and recycling with the tools and equipment provided by the project.

Incentives for technicians and servicing shops

15. Four sets of equipment and tools were distributed to four professional training institutes to facilitate training in good service practices in refrigeration and retrofitting of HCFC-based equipment to HC technology.

Public awareness and consumer orientation

16. Dissemination of printed materials was done on: ozone layer depletion and its impact to human health and the environment; the main achievements of the Montreal Protocol implementation at the country level; good service practices and retrofitting; and HCFC alternative refrigerants.

Project implementation and monitoring

17. Project coordination and management under the HPMP is supervised by the NOU. The management unit is responsible for preparing operational and procurement annual plans; analysing and informing stakeholders about market trends on HCFC alternatives at the national and international levels; designing and implementing activities to monitor HPMP results and country's compliance with the Montreal Protocol obligations; and preparing periodically detailed progress reports for internal use.

Level of fund disbursement

18. As of April 2015, of the US \$315,000 so far approved (US \$146,500 for UNEP and US \$168,500 for UNDP), US \$180,912 (57 per cent) had been disbursed (US \$104,434 for UNEP and US \$76,478 for UNDP). The balance of US \$134,088 will be disbursed in 2015 and 2016.

Implementation plan for the second tranche of the HPMP

19. During the second funding tranche of the HPMP, the Government of Paraguay will implement the following activities:

- (a) *Regulatory framework (UNEP)(US \$0.00)*: Implementation and adjustments to the quota system; regulations to restrict imports on HCFC-based equipment; development of a standard for extinguisher labelling; and identification of the best available alternatives for HCFC-based pre-blended polyols (UNDP);
- (b) *Import controls and illegal trade prevention (UNEP)(US \$27,000)*: Training of 60 SEAM environmental inspectors and customs officers on control of HCFC and pre-blended

polyols containing HCFC; inter-institutional cooperation with the customs office; and periodic random visits to the customs entry points to verify equipment and gas imports;

- (c) *Development and implementation of a comprehensive management system in the use of refrigerants (UNEP) (US \$44,000)*: Revision and update of the voluntary standards for the use of refrigerants; development of a standard for an effective HCFC use control system; training of 80 to 120 technicians on the conversion of HCFC-based systems to HC and management of natural refrigerants; and implementation of the certification system for refrigeration technicians at a national level in agreement with the Labour Ministry;
- (d) *Technical assistance and incentives for the refrigeration and air-conditioning servicing sector and end-users of HCFCs (UNDP)(US \$120,500)*: One training workshop per year on HCFC-based equipment conversion to HCs available in the national market; support to the recovery centres already established; establishment of one or two additional recovery centres; and delivery of tools, equipment and consumables to technicians and service workshops;
- (e) *Public awareness and consumer orientation programme (UNEP)(US \$20,000)*: Public awareness campaign in mass media and social networks to promote HCFC alternative technologies and agreements with supermarket associations to develop advertising campaigns promoting the use of HCFC-free equipment; and
- (f) *Project implementation and monitoring (UNEP)(US \$40,500)*: Consultancy services to coordinate, design and follow up on HPMP activities, coordination of meetings and follow up on agreements with the different stakeholders.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Verification report

20. Paraguay was selected to include an independent verification report along with the present tranche request². Although Paraguay has already submitted its 2014 CP implementation report indicating an HCFC consumption level in compliance with the Agreement, by the time of issuance of this document, the verification of HCFC consumption in 2014 was still underway. Therefore, in line with decision 72/19, funds approved under the second tranche will not be transferred to the implementing agencies until the Secretariat has reviewed the verification report and confirmed that the Government of Paraguay is in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee.

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

Legal framework

21. In line with decision 63/17, confirmation has been received from the Government that an enforceable national system of licensing and quotas for HCFC imports and exports is in place and that the

² The Executive Committee requested the Secretariat to provide at the first meeting of each year, starting in 2013, *inter-alia*, an indicative sample of 20 per cent of countries with an HCFC consumption baseline of 360 mt and below that had an approved HPMP, to enable the Executive Committee to approve such a sample for the purposes of verification of that country's compliance with the HPMP Agreement for that year (per decision 61/46(c)).

system is capable of ensuring compliance with the Montreal Protocol. The HCFC import quota for 2015 (16.1 ODP tonnes) was established based on the level allowed under the Montreal Protocol and was distributed among 17 importers in November 2014. For subsequent years, the annual quota will be based on the levels allowed under the Montreal Protocol.

22. The licensing and quota system is managed on-line by the Customs department and the NOU. All HCFC shipments are controlled in the Customs Primary Zone; when irregularities are detected, refrigerants are re-embarked to the country of origin. The annual HCFC quota is defined by a ministerial resolution issued by the SEAM, and individual quotas are officially notified to importers. Eighty per cent of the national quota is allocated to importers that have imported HCFCs within the last three years, ten per cent to occasional importers and ten per cent for extraordinary needs.

Refrigeration servicing sector

23. In discussing the future sustainability of the ongoing training programmes, UNEP explained that although 60 per cent of technicians in the country have been trained in good service practices and the curriculum of training institutes is being updated to cover formal technicians in the future, there are still many unskilled technicians that will require further training. In the case of customs, 80 per cent of the relevant officers have been trained and the curricula of the Customs Technical Superior Institute is being updated. However, further training is still needed given the changes in the dynamics of ODS illegal trade and the need to update front-line officers.

24. Progress has been achieved in the technician certification scheme (there are two certification institutions accredited by the National Certification Organism) and the standard on handling refrigerants used in refrigeration and air-conditioning. Certification of technicians is voluntary. The main challenge for technicians to take the training and certification is the cost given the loss of income during that time. On the other hand, their main incentive is the opportunity to obtain a higher level of knowledge and a better position to earn a higher income.

25. In the context of decisions 72/17 and 73/34³, the Secretariat asked UNEP to provide more information on retrofitting to flammable refrigerants. UNEP explained that they constantly inform main stakeholders about their responsibilities and risks associated with the retrofit of HCFC-based refrigeration and air-conditioning equipment to flammable or toxic refrigerants, as well as associated servicing. In regard to the standards and regulations, a public consultation on a technical standard on refrigeration and air-conditioning equipment retrofitting with HC is in progress. Currently, the certification programme includes HC management in the maintenance servicing as well as any updates of relevant standards.

26. UNEP also clarified that three HCFC-based refrigeration units, located in three training institutes, have been retrofitted to HCs as a pilot and are under assessment to measure their performance. Taking into account the results of these pilot conversions, a conversion of equipment within the SEAM facilities will be carried out in future. The retrofit will be done by technicians who are working in coordination with the SEAM through agreements within the HPMP framework.

27. Noting the gradual ban on imports of HCFC-22-based air-conditioners introduced starting 1 March 2015, the Secretariat enquired about the alternative technologies replacing these systems. UNEP replied that locally available alternatives are HFC-134a, HFC-404A, HFC-407C, and HFC-410A for new equipment; and HFC-417A, HFC-427A, AN-22, HC-290 and HC-600a for retrofitting as shown in Table 2. HC-600a and HC-290 are commercially available, but imports are not registered due to the lack of a specific code in the Customs Common Registry of Mercosur.

³ These decisions recommend that if a country were to decide to proceed with retrofits and associated servicing to flammable and toxic refrigerants in refrigeration and air-conditioning equipment originally designed for non-flammable substances, it would do so assuming all associated responsibilities and risks and only in accordance with the relevant standards and protocols.

Table 2. Imports of HCFC alternative refrigerants in Paraguay

Refrigerant	2013 imports (mt)	2014 imports (mt)	Growth rate (%)
HFC-134a	220.22	228.79	3.9
HFC-404A	11.23	18.45	64.3
HFC-407C	0.79	1.70	115.2
HFC-410A	0.57	4.63	712.3
HFC-417A	0	7.10	-
AN-22 ⁴	0	5.65	-
Total	232.92	266.32	14.3

28. Despite SEAM's commitment to promoting low-global-warming potential (GWP) and energy-efficient alternatives, a large-scale use of HC-based technology is not yet possible due to lower cost and availability of other alternatives. New equipment designed to operate with HC-290 is not available and alternatives such as HFC-32 are too expensive. The main objective of the second tranche request will be to ensure appropriate conditions to adopt low-GWP alternative refrigerants as they become available and affordable. Activities implemented under the HPMP such as awareness raising and law enforcement are considered key to help modify current market trends. Current training and certification of technicians are crucial in ensuring a transition to low-GWP alternatives.

Conclusion

29. The Secretariat noted that Paraguay was in compliance with the Montreal Protocol in 2014, and showed significant progress with the activities under stage I of the HPMP. Training was provided to 155 enforcement officers, 342 customs officers and 390 refrigeration trainers and technicians, 210 technicians were certified, and the NOU participated in the promotion and development of several standards including those related to the handling of alternative technologies. Over 57 per cent of the approved funds was disbursed. As the verification of HCFC consumption in 2014 is still underway, funds approved under the second tranche cannot be transferred to the implementing agencies until the Secretariat has reviewed the verification report and confirmed that the Government of Paraguay is in compliance with the Montreal Protocol and its Agreement with the Executive Committee.

RECOMMENDATION

30. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the second tranche of stage I of the HCFC phase-out management plan of (HPMP) in Paraguay.

31. The Fund Secretariat further recommends blanket approval of the second tranche of stage I of the HPMP for Paraguay, and the corresponding 2015-2019 tranche implementation plan, at the funding levels shown in the table below, on the understanding that:

- (a) If Paraguay were to decide to proceed with retrofits and associated servicing to flammable and toxic refrigerants in refrigeration and air-conditioning equipment originally designed for non-flammable substances, it would do so assuming all associated responsibilities and risks and only in accordance with the relevant standards and protocols; and

⁴ AN-22 is a refrigerant blend composed of 18.25 per cent of HFC-134a, 79 per cent of HFC-125 and 2.75 per cent of HC-600a. This refrigerant is developed by Anton Company in Argentina and distributed in Paraguay. It is claimed to have characteristics that are compatible with HCFC-22 and the factsheet can be downloaded in the following site: <http://www.refrigerantesanton.com.ar/AN22.pdf>

- (b) The approved funds would not be transferred to UNDP and UNEP until the Secretariat had reviewed the verification report and confirmed that the Government of Paraguay was in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee.

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, second tranche)	120,500	15,665	UNEP
(b)	HCFC phase-out management plan (stage I, second tranche)	131,500	9,862	UNDP