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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Seventy-third Meeting  
Paris, 9-13 November 2014

**PROJECT PROPOSAL: CUBA**

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

Phase-out

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

UNDP

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

### Cuba

<b>(I) PROJECT TITLE</b>	<b>AGENCY</b>
HCFC phase out plan (Stage I)	UNDP (lead)

<b>(II) LATEST ARTICLE 7 DATA (Annex C Group I)</b>	Year: 2013	12.19 (ODP tonnes)
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<b>(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)</b>								<b>Year: 2013</b>	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Serviceing				
HCFC-141b in Imported Pre-blended Polyol		0.2							*0.2
HCFC-22					12.2				12.2

\*The actual consumption is 6.1 ODP tonnes. The Government of Cuba will resubmit the country programme implementation report

<b>(IV) CONSUMPTION DATA (ODP tonnes)</b>			
2009 - 2010 baseline:	16.9	Starting point for sustained aggregate reductions:	30.23
<b>CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)</b>			
Already approved:	19.26	Remaining:	10.97

<b>(V) BUSINESS PLAN</b>		2014	2015	2016	2017	2018	2019	2020	Total
UNDP	ODS phase-out (ODP tonnes)	1.8	1.3	1.6	0.0	1.1	0.0	0.6	6.4
	Funding (US \$)	174,658	231,120	152,142	0	107,500	0	60,200	725,620

<b>(VI) PROJECT DATA</b>		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Montreal Protocol consumption limits		n/a	n/a	16.9	16.9	15.2	15.2	15.2	15.2	15.2	11.0	
Maximum allowable consumption (ODP tonnes)		n/a	n/a	16.9	16.9	15.2	15.2	15.2	15.2	15.2	11.0	
Agreed funding (US\$)	UNDP Project costs	750,000		700,000*			141,527		100,000		56,000	1,747,527
	Support costs	56,250		52,500*			10,615		7,500		4,200	131,065
Funds approved by ExCom (US\$)	Project costs	750,000	537,527*	0	0	0	0	0	0	0	0	1,287,527
	Support costs	56,250	40,315*	0	0	0	0	0	0	0	0	96,565
Total funds requested for approval at this meeting (US\$)	Project costs				<b>162,473</b>							162,473
	Support costs				<b>12,185</b>							12,185

<b>Secretariat's recommendation:</b>	Blanket approval
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\*The second tranche of stage I of the HPMP for Cuba amounted to US \$700,000 plus agency support costs of US \$52,500, however at the 68<sup>th</sup> meeting an advance of funding on the second tranche was approved, on an exceptional basis, at the amount of US \$537,527 plus agency support costs of US \$40,315.

## PROJECT DESCRIPTION

1. On behalf of the Government of Cuba, UNDP as the designated implementing agency, has submitted to the 73<sup>rd</sup> meeting a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP)<sup>1</sup> at the amount of US \$162,473<sup>2</sup>, plus agency support costs of US \$12,185. The submission includes a progress report on the implementation of the first tranche of the HPMP and the tranche implementation plan for 2015.

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

2. The results achieved during the implementation of the first tranche are described below:
- (a) *HCFC policies and regulations:* In 2012 the Ministry of Science, Technology and the Environment (CITMA) promulgated resolutions to set a new accelerated timetable for HCFC phase-out according to the Montreal Protocol, to ban the installation of new capacity to manufacture HCFC-based equipment and to establish the national ODS phase-out in the period 2012-2030. The National Ozone Unit (NOU) is currently reviewing the HCFC handling and emissions norms;
  - (b) *Polyurethane (PU) foam sector:* An international tender was called to procure equipment for the conversion of the three largest manufacturing plants consuming 112.54 mt (12.38 ODP tonnes) of HCFC-141b contained in imported pre-blended polyols (two plants at Refrigeracion Caribe and one plant at Lamcomet). Two equipment suppliers were selected. The first one already signed a procurement contract, prepared the work plan and engineering proposal for the conversion of two discontinuous panels' plants and will deliver equipment by March 2015, for installation in May 2015, and project completion in June 2015. The second supplier, in charge of one continuous panels' plant, will sign its procurement contract by the end of 2014, and the conversion is expected to be completed by the second half of 2015.
  - (c) *Refrigeration servicing sector:* A national inventory of refrigeration equipment was completed; 16 centres across the country were equipped with refrigeration equipment and materials required to develop training courses on good refrigeration servicing practices; 210 refrigeration systems using CFCs or HCFCs were converted to ODS-free alternatives (mostly R-404A); and training was given to specialists and engineers on alternatives to HCFC-141b for flushing of refrigeration circuits and safe handling of hydrocarbon(HC)-based refrigerants.

### Verification report of national HCFC consumption targets

3. A verification report for 2013 was submitted along with the tranche request. The 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 2013 was 221.6 mt (12.19 ODP tonnes).

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<sup>1</sup>The HPMP for Cuba was approved by the Executive Committee at its 65<sup>th</sup> meeting to reduce HCFC consumption by 35 per cent of the baseline by 1 January 2020. The second tranche was originally planned for 2013 but only submitted to the 73<sup>rd</sup> meeting.

<sup>2</sup>The second tranche of stage I of the HPMP for Cuba amounted to US \$700,000 plus agency support costs of US \$52,500, however at the 68<sup>th</sup> meeting, an advance of funding on the second tranche was approved, on an exceptional basis, at the amount of US \$537,527 plus agency support costs of US \$40,315.

Level of fund disbursement

4. As of 29 September 2014, of the US \$1,287,527 approved for the first tranche and the advance of funds from the second tranche, US \$259,320 had been disbursed. The balance of US \$1,028,207 will be disbursed in 2015.

Annual plans for the second tranche of the HPMP

5. The main activities to be implemented during the second tranche of the HPMP include:
- (a) Completion of the conversions to hydrocarbons (HC) at Refrigeracion Caribe and Lamcomet; and completion of the conversions to water-blown technology of the remaining three enterprises (FRIARC, INPUD and IDA, consuming 8.72 mt or 0.96 ODP tonnes). This activity will be implemented with funds from the first tranche;
  - (b) Procurement of equipment for identification of refrigerants (US \$20,000);
  - (c) Procurement of parts, accessories and materials for refrigeration systems retrofits and equipment maintenance (US \$100,473);
  - (d) Support for the introduction of alternative refrigerants through participation on international refrigeration workshop, national workshops on good refrigeration servicing practices and workshop on HCFC control measures for customs officials (US \$38,000); and
  - (e) Monitoring and auditing of HPMP implementation (US \$4,000).

**SECRETARIAT'S COMMENTS AND RECOMMENDATION**

**COMMENTS**

Operational licensing system

6. The Government of Cuba has already issued HCFC import quotas for 2014 and 2015 in accordance with the Montreal Protocol control targets. CITMA assigns quotas to selected importers based on their historic imports and the amount requested. The Centre for Inspection and Care of the Environment (CICA), with the technical support from the NOU grants a license to each importer for every imports shipping. The customs department requests the importer to present the license before the imported product is legalized. Licenses are valid until 31 December of each year and unused quotas do not accumulate. The same procedure applies to HCFC-141b contained in imported pre-blended polyols.

HCFC consumption

7. The HCFC baseline for compliance has been established at 16.9 ODP tonnes, based on the actual consumption reported under Article 7 of the Montreal Protocol for 2009 and 2010 as shown in Table 1.

**Table 1. HCFC consumption in Cuba (2009-2013 Article 7 data)**

HCFC	2009	2010	2011	2012	2013	Baseline
<b>Metric tonnes</b>						
HCFC-22	195.12	322.97	245.45	226.70	221.70	259.05
HCFC-124	0.37	0.83	0.63	0.00	0.00	0.60
HCFC-141b	8.57	38.65	6.57	22.10	0.00	23.61
HCFC-142b	0.22	0.50	0.38	0.00	0.00	0.36
<b>Total (mt)</b>	<b>204.28</b>	<b>362.95</b>	<b>253.03</b>	<b>248.80</b>	<b>221.70</b>	<b>283.62</b>
HCFC-141b in imported pre-blended polyols *	132.62	110.18	59.72	54.54	55.45	**121.33
<b>ODP tonnes</b>						
HCFC-22	10.7	17.8	13.50	12.47	12.19	14.2
HCFC-124	0.0	0.0	0.01	0.00	0.00	0.0
HCFC-141b	1.0	4.3	0.72	2.43	0.00	2.7
HCFC-142b	0.0	0.0	0.03	0.0	0.00	0.0
<b>Total (ODP tonnes)</b>	<b>11.7</b>	<b>22.1</b>	<b>14.26</b>	<b>14.90</b>	<b>12.19</b>	<b>16.9</b>
HCFC-141b in imported pre-blended polyols *	14.58	12.12	6.57	6.00	6.10	**13.35

\*Source: National Ozone Unit. UNDP indicated that figures reported in the country programme implementation report for 2010 to 2013 were incorrect. Revised reports will be submitted by the Government.

\*\*Average consumption 2007-2009.

8. The Secretariat noted that despite the forecast for increased HCFC-22 consumption presented in the HPMP, the consumption has consistently decreased since 2010. This was explained by economic difficulties encountered by the importers and by the implementation of HPMP activities that have promoted the adoption of alternatives (refer to the technical issues section). With regard to HCFC-141b, the Government of Cuba banned imports of HCFC-141b in bulk for flushing activities from 1 January 2014, which already represents a reduction of 2.7 ODP tonnes (15.9 per cent) from the baseline for compliance.

#### Verification report of national HCFC consumption targets

9. UNDP submitted an independent verification of 2013 consumption. The verification establishes that the quota system is properly implemented by CITMA, which allocates quotas only to a few importers selected in order to achieve better control of imports, and supported by the Customs department, following a procedure established by a resolution. The verifier also observed consistency of data provided by different sources such as the quotas, licenses, customs declarations and statements of importing firms. The verification concluded that data in the annual consumption report for 2013 is reliable and therefore Cuba is in compliance with its consumption targets.

#### Technical issues

10. The Secretariat discussed with UNDP details on the established national reconversion programme of refrigeration systems in facilities using ODS, under which 210 systems have been converted to non-ODS alternatives, mainly R-404 in more than 90 per cent of the cases, followed by R-407C, or when conditions appropriate or special requirement exists, HC and R-507C. This activity started from CFC-based equipment under the national phase-out plan and continues to HCFC-based equipment under the HPMP. Most of the equipment converted is commercial refrigeration systems (refrigerated displays, racks, cold rooms) with cooling capacity between 0.75 and 2.0 refrigeration tonnes. The main items replaced or modified in the systems are the compressors and condensing units. The HPMP contribution covers between 20 and 30 per cent of the total cost. So far there is not an estimation of the annual amount of HCFC for servicing avoided through the conversion of the 210 refrigeration systems achieved. In the few cases where HC have been used, the same safety protocols established in the past for the conversion

of domestic refrigerators to HC have been used. To support this activity, six workshops to end-users and technicians have been held and 90 technicians have been trained on conversion procedures. UNDP also indicated that the Government of Cuba was informed of the recent decision 72/17 on the responsibility for retrofits to flammable or toxic alternatives.

11. UNDP also explained that equipment and materials were procured to give maintenance to the existing 16 collection centres of refrigerants included in the network on recovery, recycling, regeneration and storage for destruction of HCFCs. New refrigeration training courses were designed to promote the use of low-global warming potential (GWP) alternatives, and refrigeration technicians will start receiving this training by November 2014.

12. With regard to the PU foam conversion project, at its 68<sup>th</sup> meeting the Executive Committee approved, on an exceptional basis, an advance of funding on the 2<sup>nd</sup> tranche, at the amount of US \$537,527 to allow UNDP to start immediately with only one procurement process with a single equipment provider to obtain savings and avoid a delay of five months in implementation. UNDP explained that delays occurred due to lack of experience in the procurement process on the side of the suppliers and the authorities. In particular, several routine steps took longer than planned (i.e., preparation of offers by suppliers, evaluation of proposals by local authorities, and negotiations on the terms of the contracts between local authorities and suppliers). UNDP indicated that the discontinuous panels' conversions would finish in June 2015 and the continuous panels later by the second half of 2015.

#### Level of fund disbursement

13. It is noted that disbursement of the total funding so far approved is 20.1 per cent. The overall disbursement level is low due to the prolonged equipment procurement process in the foam sector; however 58 per cent of the funds approved for the refrigeration servicing sector have been disbursed and 93 per cent committed. The approval of the tranche will help Cuba and UNDP continue implementing activities in this sector without disruption.

#### Conclusion

14. The Secretariat noted that the Cuba's import licensing and quota system is operational and will enable HCFC consumption reductions in line with the Montreal Protocol's phase-out schedule. The activities in the servicing sector are progressing and are being implemented in close coordination with stakeholders. Sixteen training centres have been strengthened and the country is implementing a conversion programme for ODS-based equipment that had started under the national phase-out management plan. The ban established on imports of HCFC-141b in bulk since 1 January 2014 and the activities being implemented in the refrigeration servicing sector are having an impact on the consumption of HCFCs and associated compliance. With regard to the PU foam enterprises consuming HCFC-141b contained in imported pre-blended polyols, which are not counted as consumption for compliance, an advance of funds from the second tranche approved by the Executive Committee was intended to accelerate the completion of the PU foam conversions, but for unforeseen issues with suppliers of equipment (which have already been addressed), procurement of equipment took longer than expected. The conversion of the complete sector will be completed during 2015 and the Government of Cuba is planning to issue a ban on imports of HCFC-141b contained in pre-blended polyols by 31<sup>st</sup> December 2015, once the conversions are completed.

#### **RECOMMENDATION**

15. The Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the first tranche of stage I of the of the HCFC phase-out management plan (HPMP) in Cuba, and further recommends blanket approval of the second tranche of stage I of the HPMP for Cuba, and the corresponding 2015 tranche implementation plan, with associated support costs at the

funding level shown in the table below, on the understanding that Cuba assumed all responsibilities and risks associated with retrofitting HCFC-based refrigeration and air-conditioning equipment to flammable or toxic refrigerants and associated servicing:

<b>Project title</b>	<b>Project funding (US \$)</b>	<b>Support cost (US \$)</b>	<b>Implementing agency</b>
HCFC phase-out management plan (stage I, second tranche)	162,473	12,185	UNDP

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