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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Eightieth Meeting  
Montreal, 13-17 November 2017

**PROJECT PROPOSAL: PERU**

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, first tranche)

UNDP and UNEP

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

<b>(I) PROJECT TITLE</b>	<b>AGENCY</b>
HCFC phase out plan (stage II)	UNEP, UNDP (lead)

<b>(II) LATEST ARTICLE 7 DATA (Annex C Group I)</b>	Year: 2016	22.21 (ODP tonnes)
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<b>(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)</b>								<b>Year: 2016</b>	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-124					0.0				0.0
HCFC-141b					1.4				1.4
HCFC-141b in Imported Pre-blended Polyol		23.9							23.9
HCFC-142b					0.4				0.4
HCFC-22					20.3				20.3

<b>(IV) CONSUMPTION DATA (ODP tonnes)</b>			
2009 - 2010 baseline:	26.88	Starting point for sustained aggregate reductions:	26.88
<b>CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)</b>			
Already approved:	3.74	Remaining:	23.14

<b>(V) BUSINESS PLAN</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>After 2020</b>	<b>Total</b>
UNDP	ODS phase-out (ODP tonnes)	2.69		2.69		5.38
	Funding (US \$)	251,010		251,010		502,020
UNEP	ODS phase-out (ODP tonnes)	0.27	0.27		1.70	2.24
	Funding (US \$)	13,856	25,000		157,173	196,029

<b>(VI) PROJECT DATA</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>	
Montreal Protocol consumption limits		24.19	24.19	24.19	17.47	17.47	17.47	17.47	17.47	8.74	n/a	
Maximum allowable consumption (ODP tonnes)		24.19	24.19	24.19	17.47	17.47	17.47	17.47	17.47	8.74	n/a	
Project costs requested in principle (US\$)	UNDP	Project costs	350,100	0	350,100	0	0	350,100	0	0	116,700	1,167,000
		Support costs	24,507	0	24,507	0	0	24,507	0	0	8,169	81,690
	UNEP	Project costs	62,400	0	62,400	0	0	62,400	0	0	20,800	208,000
		Support costs	8,112	0	8,112	0	0	8,112	0	0	2,704	27,040
Total project costs requested in principle (US\$)		412,500	0	412,500	0	0	412,500	0	0	137,500	1,375,000	
Total support costs requested in principle (US\$)		32,619	0	32,619	0	0	32,619	0	0	10,873	108,730	
Total funds requested for approval at this meeting (US\$)		445,119	0	445,119	0	0	445,119	0	0	148,373	1,483,730	

<b>(VII) Request for funding for the first tranche (2017)</b>		
<b>Agency</b>	<b>Funds requested (US \$)</b>	<b>Support costs (US \$)</b>
UNDP (lead)	350,100	24,507
UNEP	62,400	8,112

<b>Funding request:</b>	<b>Approval of funding for the first tranche (2017) as indicated above</b>
Secretariat's recommendation	For individual consideration

## PROJECT DESCRIPTION

1. On behalf of the Government of Peru, UNDP as the lead implementing agency, has submitted stage II of the HCFC phase-out management plan (HPMP) at a total cost of US \$1,483,489, consisting of US \$1,166,775, plus agency support costs of US \$81,674 for UNDP, and US \$208,000, plus agency support costs of US \$27,040 for UNEP, as originally submitted<sup>1</sup>. The implementation of stage II of the HPMP will phase out 14.40 ODP tonnes of HCFCs to meet the target of 67.5 per cent reduction in HCFC baseline consumption by 2025, as originally submitted.
2. The first tranche for stage II of the HPMP being requested at this meeting amounts to US \$732,661, consisting of US \$606,475, plus agency support costs of US \$42,453 for UNDP, and US \$74,100, plus agency support costs of US \$9,633 for UNEP, as originally submitted.

### **Status of implementation of stage I of the HPMP**

3. Stage I of the HPMP for Peru was approved by the Executive Committee at its 68<sup>th</sup> meeting to meet 10 per cent reduction by 2015<sup>2</sup>, at a total cost of US \$310,110 including agency support costs, to phase out 1.79 ODP tonnes of HCFC-141b and 1.95 ODP tonnes of HCFC-22 in the refrigeration servicing sector.

#### Progress in implementation of stage I activities

4. Peru has an operational HCFC import licensing and quota system, which has been strengthened during the implementation of stage I. The Ministry of Production (PRODUCE) establishes annual import quotas through Directorial Resolutions; importers and distributors are required to register. A manual on procedures to import ODS and ODS-based equipment was produced to facilitate the operationalization of the licensing and quota system and the monitoring and enforcement of import controls. The Government of Peru has established a zero (0) quota for imports of HCFC-141b pure from 1 January 2017. To ensure the sustainability of the phase-out of HCFC-141b pure while the permanent ban is being discussed in Congress, the Government will continue issuing an annual zero quota for imports until the permanent ban is approved.
5. Additional measures include the requirement of an authorization from the national ozone unit (NOU) to import refrigeration and air-conditioning (RAC) equipment containing ODS; mandatory labeling for containers or RAC equipment, indicating the kind of material and substance used as a refrigerant or foaming agent; labelling on energy efficiency for all electric equipment and appliances; and sanctions for non-compliance with these measures.
6. Fifty-six customs officers and 25 customs brokers have been trained on the HCFC licensing and quota system, customs codes, technical analysis for detecting HCFC-141b in imported pre-blended polyols, refrigerant sampling from iso-tanks, and proper disposal of seized ODS and ODS-based equipment.
7. In the refrigeration servicing sector, four sets of equipment and tools for good practices on RAC servicing (i.e., recovery units, vacuum pumps, refrigerant identifier, cylinders, welding equipment, mini-split AC unit and refrigerant) have been distributed to refrigeration training centres; 70 trainers and 1,000 technicians have received training on HCFC-free technologies for flushing refrigeration systems and good practices in RAC, including a session exclusively for women with the participation of 30 technicians;

<sup>1</sup> As per the letter of 7 August 2017 from the Ministry of Production of Peru (PRODUCE) to UNDP.

<sup>2</sup> At the 75<sup>th</sup> meeting the duration of the implementation of stage I of the HPMP was extended until 2016.

and training videos and brochures on best practices and alternatives to HCFCs in flushing activities have been developed.

8. During the second half of 2017, training will be provided to 50 additional customs officers and custom brokers, three multi-refrigerant identifiers will be distributed to custom offices, six refrigeration training modules (comprising compressor, evaporator and condenser) will be provided to a Good Practices Centre; and laboratory tools (e.g., refrigerant identifiers, refrigerant samples, welding equipment, cylinders) will be provided to training institutes and the refrigeration association. Additional training will also be given to technicians and distributors on HCFC-free techniques for flushing refrigeration equipment.

#### Status of disbursements

9. As of August 2017, of the total funds of US \$282,671 approved so far, US \$236,977 (84 per cent) has been disbursed. The remaining US \$45,694 will be disbursed during 2017.

### **Stage II of the HPMP**

#### Remaining eligible consumption in Peru

10. After deducting 3.74 ODP tonnes of HCFCs associated with stage I and 14.40 ODP tonnes proposed for stage II, the remaining consumption of HCFCs eligible for funding amounts to 8.74 ODP tonnes, as shown in Table 1.

**Table 1: Overview of the remaining HCFC consumption eligible for funding (ODP tonnes)**

HCFC	Starting point	Reduction in stage I	Remaining consumption	Reduction in stage II	Remaining consumption
HCFC-22	23.85	1.95	21.90	14.00	7.90
HCFC-123	0	0	0	0	0
HCFC-124	0.06	0	0.06	0.01	0.05
HCFC-141b	1.79	1.79	0	0	0
HCFC-142b	1.18	0.00	1.18	0.39	0.79
<b>Total (ODP tonnes)</b>	<b>26.88</b>	<b>3.74</b>	<b>23.14</b>	<b>14.40</b>	<b>8.74</b>

#### HCFC consumption and sector distribution

11. The Government of Peru reported a consumption of 22.21 ODP tonnes of HCFC in 2016, which was 17.4 per cent below the HCFC baseline consumption and 8.2 per cent below the limits established in its Agreement with the Executive Committee (24.19 ODP tonnes). Peru also imported 23.94 ODP tonnes of HCFC-141b contained in pre-blended polyols. The 2012-2016 HCFC consumption is shown in Table 2.

**Table 2. HCFC consumption in Peru (2012-2016 Article 7 data)**

HCFC	2012	2013	2014	2015	2016	Baseline
<b>Metric tonnes (mt)</b>						
HCFC-22	451.50	434.84	359.69	374.91	369.91	433.29
HCFC-123*	0	0	0	2.98	1.29	0
HCFC-124	1.97	2.14	1.02	0.28	0.27	2.77
HCFC-141b	13.16	9.95	17.53	17.62	13.13	16.25
HCFC-142b	10.15	11.57	4.31	2.00	6.03	18.15
<b>Total (mt)</b>	<b>476.78</b>	<b>458.5</b>	<b>382.55</b>	<b>397.79</b>	<b>390.63</b>	<b>470.46</b>
HCFC-141b in imported pre-blended polyols**	98.04	842.78	230.37	295.58	217.67	n/a
<b>ODP tonnes</b>						
HCFC-22	24.83	23.92	19.78	20.62	20.35	23.85
HCFC-123*	0.00	0.00	0.00	0.06	0.03	0.00
HCFC-124	0.04	0.05	0.02	0.01	0.01	0.06
HCFC-141b	1.45	1.09	1.93	1.94	1.44	1.79

HCFC	2012	2013	2014	2015	2016	Baseline
HCFC-142b	0.66	0.75	0.28	0.19	0.39	1.18
<b>Total (ODP tonnes)</b>	<b>26.98</b>	<b>25.81</b>	<b>22.01</b>	<b>22.82</b>	<b>22.21</b>	<b>26.88</b>
HCFC-141b in imported pre-blended polyols**	10.78	***92.71	25.34	32.51	23.94	n.a.

\*HCFC-123 was not consumed before 2015 and therefore, it is not included in the HCFC baseline or in the starting point for aggregated reductions on HCFC consumption.

\*\*Country programme implementation reports.

\*\*\* Temporary increase due to a greater demand for PU foam to build structures, to host the 20<sup>th</sup> session of the Conference of the Parties of the United Nations Framework Convention on Climate Change, held in Lima in December 2014.

12. The verification report for 2016<sup>3</sup> confirmed that 22.21 ODP tonnes of HCFCs were imported, that no import quota was issued for HCFC-141b for 2017 (as per the Government's commitment in decision 75/63(a)(iii)), and that Peru continues to fulfill its commitment to reduce consumption by 10 per cent of the baseline.

#### *Prices of HCFCs and alternatives*

13. Prices of HCFCs and alternatives are shown in Table 3. It is estimated that in 2017 the price of R-600a and R-290 could decrease to US \$28/kg and US \$33/kg, respectively, as their use is starting to increase.

**Table 3. Prices of HCFCs and alternatives refrigerants in Peru (US \$/kg)**

Year	HCFC-141b	HCFC-22	HFC-134a	R-404A	R-406 <sup>a</sup>	R-407C	R-410A	R-507A	R-600a	R-290	R-717
2012	7.06	3.95	11.41	20.38	9.80	13.72	9.44	12.94			3.30
2013	7.06	3.38	8.66	9.82	8.23	9.80	7.17	9.80			2.10
2014	8.70	4.31	6.76	9.04	6.69	8.03	6.95	7.69			2.70
2015	9.97	4.96	5.51	7.26	5.87	5.87	6.38	5.87			2.70
2016	13.36	8.35	4.00	6.39	7.25	6.70	6.70	5.90	45.00	90.00	2.70

Source: PRODUCE 2017.

#### *HCFC sector distribution*

14. The country programme (CP) implementation report for 2016 was submitted on 19 April 2017. The reported distribution of HCFC use among sectors is shown in Table 4.

**Table 4. Distribution of HCFC use by sector and substance (CP implementation report 2016)**

Sector	Substance	HCFC use			
		mt	mt (%)	ODP tonnes	ODP tonnes (%)
RAC servicing	HCFC-22	369.91	61	20.35	44
RAC servicing	HCFC-141b*	13.13	2	1.44	3
RAC servicing	HCFC-142b	6.04	1	0.39	1
RAC servicing	HCFC-123	1.29	0	0.03	0
RAC servicing	HCFC-124	0.27	0	0.01	0
<b>Total RAC servicing</b>		<b>390.64</b>	<b>64</b>	<b>22.21</b>	<b>48</b>
Polyurethane (PU) foam	HCFC-141b**	217.67	36	23.94	52
<b>Total</b>		<b>608.31</b>	<b>100</b>	<b>46.15</b>	<b>100</b>

\* HCFC-141b pure was phased out 1 January 2017.

\*\*Contained in imported pre-blended polyols.

15. HCFC-22 represents 94 per cent of the HCFC used in the servicing sector. Other HCFCs used in the sector are HCFC-141b (3.36 per cent) as cleaning agent in cooling circuits, HCFC-123 (0.33 per cent)

<sup>3</sup> UNEP/OzL.Pro/ExCom/79/38.

used in chillers, and HCFC-124 (0.07 per cent) and HCFC-142b (1.54 per cent) used as part of blends (R-406a and R-409a) as a substitute of CFC-12 in domestic refrigeration equipment still in operation.

16. There are about 150 workshops nationwide with more than five technicians each, and approximately 1,500 smaller workshops. Overall, the servicing sector involves approximately 6,000 technicians. Refrigeration training in Peru is provided through private educational institutions where students can optionally undertake specialized training and obtain official certification recognized on the work market. The Servicio Nacional de Adiestramiento en Trabajo Industrial (SENATI) is the largest nationwide institution.

17. Table 5 shows the consumption of HCFC-22 and other refrigerants in the refrigeration servicing sector in Peru.

**Table 5. HCFC-22 and other refrigerants use in the refrigeration servicing sector (2015) (mt)**

Subsector		HCFC-22	HFC-134a	R-404A	R-410A	R-507	R-407C	R-422D
Commercial refrigeration	Stand-alone	21.82	14.70	4.39	2.57	2.48	0.77	0.28
	Condenser units	10.42	7.02	2.10	1.23	1.19	0.37	0.13
	Central system	18.45	12.43	3.72	2.17	2.10	0.65	0.23
Industrial refrigeration		13.38	9.02	2.70	1.57	1.52	0.47	0.17
Transport refrigeration		2.14	1.44	0.43	0.25	0.24	0.08	0.03
Residential AC		251.98	169.80	50.75	29.64	28.66	8.86	3.18
Other AC		8.51	5.73	1.71	1.00	0.97	0.30	0.11
Chillers		45.55	30.70	9.17	5.36	5.18	1.60	0.57
Transport AC		2.66	1.79	0.54	0.31	0.30	0.09	0.03
<b>Total use</b>		<b>374.91</b>	<b>252.64</b>	<b>75.51</b>	<b>44.10</b>	<b>42.64</b>	<b>13.19</b>	<b>4.73</b>
<b>Total use (%)</b>		<b>46</b>	<b>31</b>	<b>9</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>1</b>

18. The low-GWP alternatives to HCFC-22 that could be introduced in RAC applications include: Hydrocarbon (HC)-based technology in residential air-conditioning and small stand-alone commercial refrigeration units; R-744-based technology in condensing units (although it has a higher cost than HCFC-22-based systems); indirect combined systems of HC (or R-717) with R-744 for centralized systems, subject to safety regulations (currently, there are HFC/R-744 systems in the market); and HC in chillers, subject to regulation.

19. The most common HCFC replacements in the market are high-GWP-based refrigerants (HFC-134a, R-404A, R-410A, R-507, R-407C), except in the domestic refrigeration sector, where almost all new equipment contains R-600a. The main barriers to introducing some of the low-GWP refrigerants are cost and availability (HFO). The expanded use of HC refrigerants will be supported by the availability of safety regulations. Stage II will focus on putting in place the conditions for the safe introduction of low-GWP refrigerants.

20. HCFC-141b is contained in imported pre-blended polyols and is consumed by several PU foam enterprises, some of them small and medium-sized. PU foam products are entirely dependent on the import of polyols from foreign systems houses, which are mainly supplying HFC-based polyols systems. Given the current circumstances, the Government of Peru has decided not to include in the submission a project to phase out HCFC-141b in polyols, but intends to submit a PU foam sector plan by 2020.

### **Proposed activities in stage II of the HPMP**

21. Stage II of the HPMP includes activities in the refrigeration servicing sector only to achieve 67.5 per cent reduction in the consumption of HCFCs in 2025, with respect to the baseline for compliance. These activities aim to improve skills and handling of tools and equipment for the safe management of refrigerants; adopt and enforce national policies, legal requirements and voluntary initiatives aimed at reducing refrigerant emissions; adopt environmentally sound end-of-life procedures for ODS-based

equipment according to national regulations; and increase awareness of end-users to reduce HCFC consumption and adopt low-GWP alternatives.

Strengthening the legal and institutional sectors (UNEP) (US \$208,000)

22. The activities include:

- (a) *Strengthening of policies and legal framework to control HCFC consumption (US \$59,000)*: Implementation of an updated legal framework to support the HCFC compliance strategy; updated quota and license system for HCFC import and export; improving the application of the harmonized customs code; delivery of four refrigerant identifiers (with refrigerant blend capabilities); and training of 160 custom officials directly involved in import procedures for HCFCs and HCFC-based equipment;
- (b) *Implementation of a certification system for technicians in the RAC sector (US \$99,000)*: Establishing a permanent and operational technical certification system in the country; organizing regional visits to gain experience; creating an awareness campaign on the certification process and certifying the first 300 technicians in RAC under the new scheme; and
- (c) *Adoption and implementation of safety standards/guidelines for flammable refrigerants (US \$50,000)*: Assessing the local needs for standards and guidelines for the application of flammable refrigerants; developing technical guidelines for the safe use/retrofit of RAC equipment with flammable refrigerants (i.e., conditions for the installation, operation and servicing of refrigeration equipment); and producing 500 copies of the guidelines developed, which will also support the implementation of the other projects in the RAC servicing sector in stage II.

RAC servicing sector (UNDP) (US \$891,175)

23. The activities include:

- (a) *Good refrigeration practices and procedures in the use of low-GWP refrigerants (US \$161,800)*: Training of 400 technicians in good refrigeration practices and proper handling of HC refrigerants, including the demonstration of safe procedures to retrofit HCFC-22-based equipment to HCs; and distribution of 35 tool kits<sup>4</sup> to technicians and servicing workshops;
- (b) *Strengthening of technical institutes (US \$125,000)*: Strengthening the RAC laboratories in three technical schools by providing equipment and basic tools to be used in the training programme;<sup>5</sup> and signing agreements between the Government and three education centres to include in the academic curriculum topics from the training programme set out in stages I and II of the HPMP;
- (c) *Training programme for RAC technicians (US \$124,000)*: Training of 40 instructors and 480 technicians on good refrigeration practices and alternative refrigerants, with emphasis in natural refrigerants and other low-GWP refrigerants; preparation and distribution of

<sup>4</sup> For HC, namely: charging station and vacuum; welding kit; hoses kit with ball valves; leak detectors; manometer; and precision balance with clip for cartridge.

<sup>5</sup> Namely: refrigerant gas recovery unit and cylinders; refrigerant identifier for blend refrigerants; vacuum pump; RAC module; manifold sets and hoses; electronic scale; welding kit for HC; leak detector for all refrigerants; manometer; filters; pressure-temperature tables; and refrigeration manuals.

500 educational booklets with the contents of the training programme; and establishment of a database to register the technicians in the RAC servicing sector;

- (d) *Implementation of refrigerant recovery, recycling and reclaiming centers (RRR) (US \$380,375):* Training of 10 trainers and 700 technicians in the operation of RRR; strengthening of five recovery and recycling centres located in five cities; and establishment of one national reclaiming centre for refrigerants in Lima to service the nationwide demand for reclaimed refrigerants; and
- (e) *Promotion of alternatives for the reduction of HCFC consumption and the use of low-GWP refrigerants in key sectors: supermarkets and hotels (US \$100,000):* Training of eight leaders and 240 technicians and RAC end-users in assessing technical, economic and environmental feasibility of changing HCFC contained in the RAC equipment to an alternative refrigerant, or replacing the equipment by non-HCFC-based equipment; design and distribution of brochures and case studies on good RAC servicing practices focused in supermarket and hotels; and promotion of volunteer agreements with end-users for conservation, conversion and disposal of selected HCFC-based equipment.

Public awareness to promote HCFC phase-out (UNDP) (US \$150,000)

24. An annual awareness campaign for end-users and decision-makers in Government institutions about responsible consumption of HCFCs and options for the use of low-GWP RAC equipment; and development of awareness material (posters and brochures) to be distributed among service workshops, end-users and equipment supply stores.

Project coordination and management (UNDP) (US \$125,600)

25. The project coordination and management will be integrated into the national ozone unit (NOU). UNDP as lead implementing agency will have the overall responsibility for reporting to the Executive Committee, and assisting the Government in the implementation of all investment and non-investment activities.

Total cost of stage II of the HPMP

26. The total cost of stage II of the HPMP has been estimated at US \$1,374,775, out of which US \$1,249,175 are for the refrigeration servicing sector at a cost-effectiveness of US \$4.80/kg in accordance to decision 74/50. Activities proposed in stage II will result in the phase-out of 14.40 ODP tonnes of HCFCs (14.00 ODP tonnes of HCFC-22, 0.01 ODP tonnes of HCFC-124 and 0.39 ODP tonnes of HCFC-142b).

Activities planned for the first tranche

27. The first funding tranche of stage II of the HPMP at the total amount of US \$677,000 will be implemented between January 2018 and December 2020, and will include customs training sessions, procurement and distribution of equipment and tools for good RAC practices, train-the-trainer workshops, visits to RRR networks and certification schemes in two countries in the region, and awareness activities.



## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

28. The Secretariat reviewed stage II of the HPMP for Peru in light of stage I, the policies and guidelines of the Multilateral Fund, including the criteria for funding HCFC phase-out in the consumption sector for stage II of HPMPs (decision 74/50), and the 2017-2019 business plan of the Multilateral Fund.

#### Completion of stage I

29. The last tranche of stage I of the HPMP (US \$29,671) was approved at the 79<sup>th</sup> meeting. UNDP confirmed that remaining activities under stage I will be operationally completed by December 2017 as established in the Agreement with the Executive Committee.

#### Revision of the starting point to include HCFC-141b contained in pre-blended polyols

30. The consumption of HCFC-141b contained in imported pre-blended polyols was not included in the starting point for aggregate reductions in HCFC consumption because part of this consumption was mistakenly reported in 2007 as official HCFC-141b consumption (bulk) under Article 7 of the Montreal Protocol<sup>6</sup>. In recognising that the 2007 reported consumption would need to be corrected before a recalculation of the starting point, the Secretariat suggested that the Government of Peru officially request the change to the Ozone Secretariat. Considering that the foam sector was only going to be addressed in stage II and that it would not contribute to compliance, the Secretariat recommended that the starting point be updated once the Article 7 data had been revised and upon submission of the foam sector project under stage II. Accordingly, decision 68/35(b)(ii) noted that the amount of 2007-2009 average consumption of HCFC-141b contained in imported pre-blended polyols would be added to the starting point upon submission of stage II of the HPMP, within the context of a foam sector plan.

31. UNDP has informed that the Government of Peru has officially requested the data correction to the Ozone Secretariat. Accordingly, the average consumption of HCFC-141b contained in imported pre-blended polyols between 2007 and 2009 is 27.91 ODP tonnes.

#### Submission of a PU foam sector plan during the implementation of stage II

32. UNDP explained that a project to phase-out HCFC-141b contained in imported pre-blended polyols was not included in the submission of stage II of the HPMP as the main supplier of polyols to Peru is a non-Article 5 enterprise based in Panama that only provides HCFC and high-GWP HFC-based pre-blended polyols; therefore it was very difficult for the country to commit to replacing HCFC-141b with low-GWP alternatives. UNDP will continue monitoring the situation with the expectation that a project would be submitted later during stage II. Similar to the approach taken during stage I in line with decision 63/15, it is proposed to allow the Government of Peru to submit the PU foam sector plan at a future meeting during the implementation of stage II, when proven cost-effective and commercially available low-GWP technology makes it possible to replace the HCFC-141b-based polyols used by PU foam enterprises. The level of HCFC-141b contained in imported pre-blended polyols eligible for funding will be determined at the time of the submission of the project and will not be above 27.91 ODP tonnes (i.e., 2007-2009 average consumption).

#### Use of HCFC-124 and HCFC-142b

33. Stage II proposed to phase out small amounts of HCFC-124 and HCFC-142b consumed in 2016 (0.27 and 6.03 mt, respectively), contained R-406a and R-409a blends used as drop-in substitutes for CFC-12 in domestic refrigeration; however, no specific activities were included to address this

<sup>6</sup> Paragraph 36(b)(ii) of document UNEP/OzL.Pro/ExCom/68/36.

consumption. Upon discussion of the matter, and considering that by the end of stage II it would not be possible to reassure that the consumption of these HCFCs was phased out and that the phase-out was sustainable, UNDP agreed to address the entire use of HCFC-124 and HCFC-142b at a future stage.

#### Activities proposed for stage II

34. Discussions between the Secretariat and UNDP focused on addressing areas of improvement identified during stage I, ensuring the largest possible coverage and a long-term sustainability of the activities proposed.

#### *Strengthening of policies and legal framework to control HCFC consumption*

35. UNDP provided reassurance that deficiencies in customs reporting identified in the HCFC consumption verification report (i.e., incorrect or incomplete definitions of substance, commercial description and tariff code<sup>7</sup>) would be addressed. Stage II includes activities to improve the application of the harmonized customs code, such as the review of the codes to identify each HCFC and its mixtures separately; establishment of an electronic link between the NOU and the customs system, to improve information crosschecking and monitoring of HCFC imports; and continuous cooperation with the NOUs in neighbouring countries. The national capacity will be strengthened by training customs officials with emphasis on the deficiencies identified in custom reporting, providing equipment for detecting refrigerants, and ensuring the continuation of self-sustained training in the future.

#### *Good refrigeration practices and procedures in the use of low-GWP refrigerants*

36. Noting that this project as submitted included retrofits of HCFC-22-based RAC equipment to HCs, the Secretariat requested additional justification of the need for this activity, the type of equipment envisaged to be converted, the existing standards and protocols in place for the operations planned, and to provide the specific information requested in decisions 72/17 and 73/34 in relation to the retrofit to flammable refrigerants of equipment designed to operate with non-flammables. In addition to the safety-related concerns, the sustainability of the retrofits was in question, as at present the price of HC-290 is ten times the price of HCFC-22. As a result of the discussion, the Government of Peru and UNDP decided not to promote the retrofit of equipment with flammable refrigerants in the HPMP, but instead promote the safe use and management of equipment designed for the use of flammable refrigerants.

#### *Training programme for RAC technicians and strengthening of technical institutes*

37. Noting that stage II intends to train 480 technicians out of 6,000 estimated in the country, the Secretariat questioned how the technicians that would not receive training would improve their skills and how the long-term sustainability of the training could be ensured. UNDP explained that stage II seeks to strengthen the training institutes to build national capacity to respond to future needs on RAC training when low-GWP alternatives are widely used in the market. Forty instructors will be trained on good servicing practices and the laboratories of the institutes will be improved with RAC training modules<sup>8</sup> and equipment. The training institutes will also commit to generate a new standard for RAC training based on the upgraded curriculum. The use of the upgraded curriculum will ensure that appropriate RAC training will reach the maximum possible number of technicians after completion of the project.

#### *Promotion of alternatives for the reduction of HCFC consumption and the use of low-GWP refrigerants in key sectors: supermarkets and hotels*

38. Based on the experience of other HPMPs that had included a demonstration project for the introduction of low-GWP-based refrigeration equipment in end-users applications, the Secretariat

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<sup>7</sup> See paragraph 13 of document UNEP/OzL.Pro/ExCom/79/38.

<sup>8</sup> The training modules contain a study programme on a specific subject, related equipment and in some cases software.

considers that the project has potential to influence the selection of technology by end-users and assembly/installation contractors when deciding on new or renewed cooling capacity in the commercial refrigeration sector. In discussions with UNDP it was agreed to expand the outcomes of the project beyond the training and information dissemination proposed, to identifying and assisting specific end-users in the installation of alternative refrigeration systems operating with low-GWP alternatives (e.g., CO<sub>2</sub>) as showcase for the sector. Accordingly, UNDP will include a demonstration pilot with the participation of different private enterprises, including counterparts and co-financing strategies. Progress on end-users identified, type of installations and technology selected, and co-financing will be included in the tranche progress reports.

#### Other matters

39. The Secretariat noted that the unitary costs being requested for some of the equipment items were higher than in other countries (e.g., reclamation unit, recovery units, chromatograph, refrigerant identifiers and cylinders). In order to reflect the possibility of obtaining better prices and given the potential to expand the coverage of the activities planned, the Secretariat suggested to consider increasing the procurement targets for some equipment items where better prices could be obtained. UNDP reassured the commitment of Peru and the implementing agencies to maximize the value for money in all proposals sought. The project will seek the best quality in equipment and tools while procuring the maximum number of sets possible in order to benefit the largest number of technicians and end-users. The targets in the project proposal (i.e., one reclamation center, five recovery and recycling centers and three sets of tool-kits and equipment for training centers) are based on the experience gained in the implementation of projects in the region; however, additional equipment could be added in the request of future tranches, based on the results of the initial tranches.

40. On this regard, the Secretariat recalls that as per existing policies, which are reflected in paragraph 8 of the Agreement, in executing the activities in the refrigeration servicing sector the country could use the flexibility available under the Agreement to address specific needs that might arise during project implementation. This would allow the procurement of additional equipment that may be needed for training institutes or recovery and recycling centers if funds are still available after the first procurement process.

#### Agreed cost for stage II of the HPMP

41. The agreed cost of the activities proposed in stage II of the HPMP amounts to US \$1,375,000 (excluding agency support costs), out of which US \$1,250,000 are for the refrigeration servicing sector at a cost-effectiveness of US \$4.77/kg in accordance with decision 74/50 (Table 6).

**Table 6. Agreed cost for stage II of the HPMP for Peru**

Activity	Agency	HCFC-22 phased-out		Cost (US \$)
		mt	ODP tonnes	
<b>Strengthening of the legal and institutional sectors</b>				
Strengthening of policies and legal framework to control HCFC consumption	UNEP	12.18	0.67	59,000
Certification system for technicians in the RAC sector		20.55	1.13	99,000
Adoption and implementation of safety standards/guidelines for flammable refrigerants		10.36	0.57	50,000
<b>Subtotal</b>		<b>43.09</b>	<b>2.37</b>	<b>208,000</b>
<b>RAC servicing sector</b>				
Good refrigeration practices and procedures in the use of low-GWP refrigerants	UNDP	33.64	1.85	161,800
Strengthening of technical institutes		26.00	1.43	125,000
Training programme for RAC technicians		25.82	1.42	124,000
Implementation of refrigerant RRR centers		81.27	4.47	381,200

Activity	Agency	HCFC-22 phased-out		Cost (US \$)
		mt	ODP tonnes	
Promotion of alternatives for the reduction of HCFC consumption and the use of low-GWP refrigerants in key sectors: supermarkets and hotels		20.73	1.14	100,000
<b>Subtotal</b>		<b>187.45</b>	<b>10.31</b>	<b>892,000</b>
<b>Public awareness to promote HCFC phase-out</b>	UNDP	31.27	1.72	150,000
<b>Subtotal refrigeration servicing sector (1+2+3)</b>		<b>261.82</b>	<b>14.40</b>	<b>1,250,000</b>
Project for coordination and management	UNDP			125,000
<b>Total</b>		<b>261.82</b>	<b>14.40</b>	<b>1,375,000</b>

42. With the approval of stage II of the HPMP, Peru will phase out 14.40 ODP tonnes of HCFC-22 used in the refrigeration servicing sector and the Government commits to reducing HCFC consumption by 67.5 per cent of the baseline by 1 January 2025.

#### *Tranche distribution*

43. Stage II only included three funding tranches for 50 per cent, 40 per cent and 10 per cent with 90 per cent of the funds released by 2020 and the last tranche in 2023. Upon discussion, it was agreed to have four tranches of: 30 per cent, 30 per cent, 30 per cent and 10 per cent, with the last tranche in 2025.

#### *Revised outputs for the first tranche*

44. Based on the new tranche distribution and the experience gained during the implementation of stage I of the HPMP, UNDP revised the plan of action for the first tranche and proposed concrete outputs. The Secretariat agreed that this was a good way to measure progress achieved at the time of reviewing the next tranche request, as it has been done during stage I. Additional outputs will be proposed with each tranche request. The outputs proposed for the first tranche are listed below:

- (a) *Strengthening the legal and institutional sectors:* Reviewing customs procedures; implementing the quota system to import HCFC; holding two training workshops for 80 custom officers; visiting the institutions in charge of the technicians certification scheme in one country from the region; conducting an awareness campaign on the certification process; and developing a first draft of a technical standard on the safe use of flammable refrigerants;
- (b) *RAC servicing sector:* Procuring equipment for the five recovery and recycling centres, holding first train-the-trainers and first four workshops on RRR (approximately 100 technicians); visiting one regional RRR network; procuring 35 tool-kits for safe handling of HC; holding first two workshops (approximately 80 technicians) in good refrigeration practices and proper handling of HC refrigerants; preparing technical specifications of equipment for training institutes; and identifying potential end-users for a pilot on the installation of alternative refrigeration systems operating with low-GWP alternatives, including their counterparts and possible co-financing strategies;
- (c) *Public awareness to promote HCFC phase-out:* Assessing awareness requirements, designing awareness materials, reproducing and distributing awareness materials, and implementing awareness campaigns; and
- (d) *Project coordination and management:* Hiring a project monitoring team, holding three meetings with stakeholders, producing relevant reports and commissioning one verification report.

*Intermediate HCFC reductions*

45. Noting the comprehensive set of activities planned and that Peru is a non-low-volume consuming country with an ambitious plan to achieve the next HCFC reduction target (35 per cent target in 2020), as well as the 67.5 per cent reduction target in 2025, the Secretariat suggested an intermediate HCFC consumption reduction between 2020 and 2025, which would reflect the progress and impact of the activities implemented. The Government of Peru indicated that as an intermediate reduction was not mandatory under the Montreal Protocol the Government did not have the legal justification to override the demands of private enterprises that might be affected. In addition, the Government is not proposing accelerated phase-out, nor is requesting additional funding for that purpose. In 2020, the country could analyse the situation and consider lowering the import quotas of HCFCs at that time.

Impact on the climate

46. The proposed activities in the servicing sector, which include better containment of refrigerants through training and the provision of equipment, will further reduce the amount of HCFC-22 used for refrigeration servicing. Each kilogramme of HCFC-22 not emitted due to better refrigeration practices results in a savings of approximately 1.82 CO<sub>2</sub>-equivalent tonnes. Although a calculation of the impact on the climate was not included in the HPMP, the activities planned by Peru, in particular its efforts to promote low-GWP alternatives, as well as refrigerant recovery and reuse, indicate that the implementation of the HPMP will reduce the emission of refrigerants into the atmosphere, resulting in climate benefits.

**Co-financing**

47. Co-financing from the demonstration project in supermarkets will be determined at a future tranche of the HPMP.

**2016-2018 draft business plan of the Multilateral Fund**

48. UNDP and UNEP are requesting US \$1,483,730 including agency support costs for the implementation of stage II of the HPMP. The total value requested of US \$890,238 for the period 2017 to 2019, is US \$349,361 above the amount in the business plan between 2017 and 2019.

**Draft Agreement**

49. A draft Agreement between the Government of Peru and the Executive Committee for the phase-out of HCFCs in stage II of the HPMP is contained in Annex I to the present document.

**RECOMMENDATION**

50. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage II of the HCFC phase-out management plan (HPMP) for Peru for the period from 2017 to 2025 to reduce HCFC consumption by 67.5 per cent of the baseline, in the amount of US \$1,483,730, consisting of US \$1,167,000, plus agency support costs of US \$81,690 for UNDP, and US \$208,000, plus agency support costs of US \$27,040 for UNEP;
- (b) Noting:
  - (i) The commitment of the Government of Peru to reduce HCFC consumption by 67.5 per cent of the baseline by 2025;
  - (ii) That the revised starting point for sustained aggregate reduction in HCFC

consumption was 54.79 ODP tonnes, calculated using actual consumption of 27.3 ODP tonnes and 26.45 ODP tonnes reported for 2009 and 2010, respectively, under Article 7 of the Montreal Protocol, plus 27.91 ODP tonnes of HCFC-141b contained in imported pre-blended polyol systems;

- (iii) That during implementation of stage II of the HPMP the Government of Peru could submit a project to phase out the use of HCFC-141b contained in imported pre-blended polyols in the polyurethane foam sector, when proven cost-effective and commercially available low-GWP technology makes it possible;
- (c) Deducting 14.40 ODP tonnes of HCFCs from the remaining HCFC consumption eligible for funding;
- (d) Approving the draft Agreement between the Government of Peru and the Executive Committee for the reduction in consumption of HCFCs, in accordance with stage II of the HPMP, contained in Annex I to the present document; and
- (e) Approving the first tranche of stage II of the HPMP for Peru, and the corresponding tranche implementation plans, in the amount of US \$445,119, consisting of US \$350,100 plus agency support costs of US \$24,507 for UNDP, and US \$62,400, plus agency support costs of US \$8,112 for UNEP.

**DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF PERU AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS IN ACCORDANCE WITH STAGE II OF THE HCFC PHASE-OUT MANAGEMENT PLAN**

**Purpose**

1. This Agreement represents the understanding of the Government of Peru (the “Country”) and the Executive Committee with respect to the reduction of controlled use of the ozone-depleting substances (ODS) set out in Appendix 1-A (“The Substances”) to a sustained level of 8.74 ODP tonnes by 1 January 2025 in compliance with Montreal Protocol schedule.
2. The Country agrees to meet the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A (“The Targets, and Funding”) in this Agreement as well as in the Montreal Protocol reduction schedule for all Substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of the Substances that exceeds the level defined in row 1.2 of Appendix 2-A as the final reduction step under this Agreement for all of the Substances specified in Appendix 1-A, and in respect to any consumption of each of the Substances that exceeds the level defined in rows 4.1.3, 4.2.3, 4.3.3, 4.4.3 and 4.5.3 (remaining consumption eligible for funding).
3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees, in principle, to provide the funding set out in row 3.1 of Appendix 2-A to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A (“Funding Approval Schedule”).
4. The Country agrees to implement this Agreement in accordance with the stage II of the HCFC phase-out management plan (HPMP) approved (“the Plan”). In accordance with sub-paragraph 5(b) of this Agreement, the Country will accept independent verification of the achievement of the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A of this Agreement. The aforementioned verification will be commissioned by the relevant bilateral or implementing agency.

**Conditions for funding release**

5. The Executive Committee will only provide the Funding in accordance with the Funding Approval Schedule when the Country satisfies the following conditions at least eight weeks in advance of the applicable Executive Committee meeting set out in the Funding Approval Schedule:
  - (a) That the Country has met the Targets set out in row 1.2 of Appendix 2-A for all relevant years. Relevant years are all years since the year in which this Agreement was approved. Years for which there are no due country programme implementation reports at the date of the Executive Committee meeting at which the funding request is being presented are exempted;
  - (b) That the meeting of these Targets has been independently verified for all relevant years, unless the Executive Committee decided that such verification would not be required;
  - (c) That the Country had submitted a Tranche Implementation Report in the form of Appendix 4-A (“Format of Tranche Implementation Reports and Plans”) covering each previous calendar year; that it had achieved a significant level of implementation of activities initiated with previously approved tranches; and that the rate of disbursement

of funding available from the previously approved tranche was more than 20 per cent;  
and

- (d) That the Country has submitted a Tranche Implementation Plan in the form of Appendix 4-A covering each calendar year until and including the year for which the funding schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.

### **Monitoring**

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A (“Monitoring Institutions and Roles”) will monitor and report on implementation of the activities in the previous Tranche Implementation Plans in accordance with their roles and responsibilities set out in the same appendix.

### **Flexibility in the reallocation of funds**

7. The Executive Committee agrees that the Country may have the flexibility to reallocate part or all of the approved funds, according to the evolving circumstances to achieve the smoothest reduction of consumption and phase-out of the Substances specified in Appendix 1-A:

- (a) Reallocations categorized as major changes must be documented in advance either in a Tranche Implementation Plan as foreseen in sub-paragraph 5(d) above, or as a revision to an existing Tranche Implementation Plan to be submitted eight weeks prior to any meeting of the Executive Committee, for its approval. Major changes would relate to:
  - (i) Issues potentially concerning the rules and policies of the Multilateral Fund;
  - (ii) Changes which would modify any clause of this Agreement;
  - (iii) Changes in the annual levels of funding allocated to individual bilateral or implementing agencies for the different tranches;
  - (iv) Provision of funding for activities not included in the current endorsed Tranche Implementation Plan, or removal of an activity in the Tranche Implementation Plan, with a cost greater than 30 per cent of the total cost of the last approved tranche; and
  - (v) Changes in alternative technologies, on the understanding that any submission for such a request would identify the associated incremental costs, the potential impact to the climate, and any differences in ODP tonnes to be phased out if applicable, as well as confirm that the Country agrees that potential savings related to the change of technology would decrease the overall funding level under this Agreement accordingly;
- (b) Reallocations not categorized as major changes may be incorporated in the approved Tranche Implementation Plan, under implementation at the time, and reported to the Executive Committee in the subsequent Tranche Implementation Report;



- (c) Any enterprise to be converted to non-HCFC technology included in the Plan and that would be found to be ineligible under the policies of the Multilateral Fund (i.e., due to foreign ownership or establishment post the 21 September 2007 cut-off date), would not receive financial assistance. This information would be reported as part of the Tranche Implementation Plan;
- (d) The Country commits to examining the possibility of using pre-blended systems with low-global warming potential blowing agents instead of blending them in-house, for those foam enterprises covered under the Plan, should this be technically viable, economically feasible and acceptable to the enterprises;
- (e) Any remaining funds held by the bilateral or implementing agencies or the country under the Plan will be returned to the Multilateral Fund upon completion of the last tranche foreseen under this Agreement.

### **Considerations for the refrigeration servicing sector**

8. Specific attention will be paid to the execution of the activities in the refrigeration servicing sub-sector included in the Plan, in particular:

- (a) The Country would use the flexibility available under this Agreement to address specific needs that might arise during project implementation;
- (b) The Country and relevant bilateral and/or implementing agencies would take into consideration relevant decisions on the refrigerant servicing sector during the implementation of the Plan.

### **Bilateral and implementing agencies**

9. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. The United Nations Development Programme (UNDP) has agreed to be the lead implementing agency (the “Lead IA”) and the United Nations Environment Programme (UNEP) has agreed to be the cooperating implementing agency (the “Cooperating IA”) under the lead of the Lead IA in respect of the Country’s activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of the Lead IA and Cooperating IA taking part in this Agreement.

10. The Lead IA will be responsible for ensuring co-ordinated planning, implementation and reporting of all activities under this Agreement, including but not limited to independent verification as per sub-paragraph 5(b). The Cooperating IA will support the Lead IA by implementing the Plan under the overall co-ordination of the Lead IA. The roles of the Lead IA and Cooperating IA are contained in Appendix 6-A and Appendix 6-B, respectively. The Executive Committee agrees, in principle, to provide the Lead IA and the Cooperating IA with the fees set out in rows 2.2 and 2.4 of Appendix 2-A.

### **Non-compliance with the Agreement**

11. Should the Country, for any reason, not meet the Targets for the elimination of the Substances set out in row 1.2 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all of its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amount set out in Appendix 7-A (“Reductions in Funding for Failure to Comply”) in respect of each ODP kilogram of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement, and take related decisions. Once decisions are taken, the specific case of not compliance with this Agreement will not be an impediment for the provision of funding for future tranches as per paragraph 5 above.

12. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decisions that may affect the funding of any other consumption sector projects or any other related activities in the Country.

13. The Country will comply with any reasonable request of the Executive Committee, the Lead IA and the Cooperating IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the Cooperating IA with access to the information necessary to verify compliance with this Agreement.

### **Date of completion**

14. The completion of the Plan and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption level has been specified in Appendix 2-A. Should at that time there still be activities that are outstanding, and which were foreseen in the last Tranche Implementation Plan and its subsequent revisions as per sub-paragraph 5(d) and paragraph 7, the completion of the Plan will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per sub-paragraphs 1(a), 1(b), 1(d), and 1(e) of Appendix 4-A will continue until the time of the completion of the Plan unless otherwise specified by the Executive Committee.

### **Validity**

15. All of the conditions set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein

16. This Agreement may be modified or terminated only by mutual written agreement of the Country and the Executive Committee of the Multilateral Fund.

**APPENDICES**

**APPENDIX 1-A: THE SUBSTANCES**

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	23.85
HCFC-124	C	I	0.06
HCFC-141b	C	I	1.79
HCFC-142b	C	I	1.18
Sub-total			26.88
HCFC-141b contained in imported pre-blended polyols	C	I	27.91
Total			54.79

**APPENDIX 2-A: THE TARGETS, AND FUNDING**

Row	Particulars	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total	
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	24.19	24.19	24.19	17.47	17.47	17.47	17.47	17.47	8.74	n/a	
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	24.19	24.19	24.19	17.47	17.47	17.47	17.47	17.47	8.74	n/a	
2.1	Lead IA (UNDP) agreed funding (US \$)	350,100	0	350,100	0	0	350,100	0	0	116,700	1,167,000	
2.2	Support costs for Lead IA (US \$)	24,507	0	24,507	0	0	24,507	0	0	8,169	81,690	
2.3	Cooperating IA (UNEP) agreed funding (US \$)	62,400	0	62,400	0	0	62,400	0	0	20,800	208,000	
2.4	Support costs for Cooperating IA (US \$)	8,112	0	8,112	0	0	8,112	0	0	2,704	27,040	
3.1	Total agreed funding (US \$)	412,500	0	412,500	0	0	412,500	0	0	137,500	1,375,000	
3.2	Total support costs (US \$)	32,619	0	32,619	0	0	32,619	0	0	10,873	108,730	
3.3	Total agreed costs (US \$)	445,119	0	445,119	0	0	445,119	0	0	148,373	1,483,730	
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)											14.40
4.1.2	Phase-out of HCFC-22 to be achieved in the previous stage (ODP tonnes)											1.95
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)											7.50
4.2.1	Total phase-out of HCFC-124 agreed to be achieved under this Agreement (ODP tonnes)											0.00
4.2.2	Phase-out of HCFC-124 to be achieved in the previous stage (ODP tonnes)											0.00
4.2.3	Remaining eligible consumption for HCFC-124 (ODP tonnes)											0.06
4.3.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)											0.00
4.3.2	Phase-out of HCFC-141b to be achieved in the previous stage (ODP tonnes)											1.79
4.3.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)											0.00
4.4.1	Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes)											0.00
4.4.2	Phase-out of HCFC-142b to be achieved in the previous stage (ODP tonnes)											0.00
4.4.3	Remaining eligible consumption for HCFC-142b (ODP tonnes)											1.18
4.5.1	Total phase-out of HCFC-141b contained in imported pre-blended polyols agreed to be achieved under this Agreement (ODP tonnes)											0.00
4.5.2	Phase-out of HCFC-141b contained in imported pre-blended polyols to be achieved in the previous stage (ODP tonnes)											0.00
4.5.3	Remaining eligible consumption for HCFC-141b contained in imported pre-blended polyols (ODP tonnes)											27.91

\*Date of completion of stage I as per stage I Agreement: 31 December 2017

### **APPENDIX 3-A: FUNDING APPROVAL SCHEDULE**

1. Funding for the future tranches will be considered for approval at the first meeting of the year specified in Appendix 2-A.

### **APPENDIX 4-A: FORMAT OF TRANCHE IMPLEMENTATION REPORTS AND PLANS**

1. The submission of the Tranche Implementation Report and Plans for each tranche request will consist of five parts:
  - (a) A narrative report, with data provided by tranche, describing the progress achieved since the previous report, reflecting the situation of the Country in regard to phase out of the Substances, how the different activities contribute to it, and how they relate to each other. The report should include the amount of ODS phased out as a direct result from the implementation of activities, by substance, and the alternative technology used and the related phase-in of alternatives, to allow the Secretariat to provide to the Executive Committee information about the resulting change in climate relevant emissions. The report should further highlight successes, experiences, and challenges related to the different activities included in the Plan, reflecting any changes in the circumstances in the Country, and providing other relevant information. The report should also include information on and justification for any changes vis-à-vis the previously submitted Tranche Implementation Plan(s), such as delays, uses of the flexibility for reallocation of funds during implementation of a tranche, as provided for in paragraph 7 of this Agreement, or other changes;
  - (b) An independent verification report of the Plan results and the consumption of the Substances, as per sub-paragraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification has to be provided together with each tranche request and will have to provide verification of the consumption for all relevant years as specified in sub-paragraph 5(a) of the Agreement for which a verification report has not yet been acknowledged by the Committee;
  - (c) A written description of the activities to be undertaken during the period covered by the requested tranche, highlighting implementation milestones, the time of completion and the interdependence of the activities, and taking into account experiences made and progress achieved in the implementation of earlier tranches; the data in the plan will be provided by calendar year. The description should also include a reference to the overall Plan and progress achieved, as well as any possible changes to the overall Plan that are foreseen. The description should also specify and explain in detail such changes to the overall plan. This description of future activities can be submitted as a part of the same document as the narrative report under sub-paragraph (b) above;
  - (d) A set of quantitative information for all Tranche Implementation Reports and Plans, submitted through an online database; and
  - (e) An Executive Summary of about five paragraphs, summarizing the information of the above sub-paragraphs 1(a) to 1(d).

2. In the event that in a particular year two stages of the HPMP are being implemented in parallel, the following considerations should be taken in preparing the Tranche Implementation Reports and Plans:

- (a) The Tranche Implementation Reports and Plans referred to as part of this Agreement, will exclusively refer to activities and funds covered by this Agreement; and
- (b) If the stages under implementation have different HCFC consumption targets under Appendix 2-A of each Agreement in a particular year, the lower HCFC consumption target will be used as reference for compliance with these Agreements and will be the basis for the independent verification.

#### **APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES**

1. Overall supervision will be provided by the Ministry of Production, through the National Ozone Office, with assistance from the Lead IA and the Cooperating IA.

2. Consumption will be monitored and determined from official data of import and export of substances as registered by the relevant government departments. The National Ozone Office will compile and report the following data and information each year on, or before the deadlines:

- (a) Annual reports on the consumption of the substances to be submitted to the Ozone Secretariat, and
- (b) Annual reports on progress in implementing the HPMP to be submitted to the Executive Committee of the Multilateral Fund.

3. The National Ozone Office and the Lead IA will jointly hire a qualified independent entity to conduct a qualitative and quantitative performance assessment of the implementation of the HPMP. The agency responsible for evaluation will have full access to relevant technical and financial information related to the implementation of the HPMP.

#### **APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY**

1. The Lead IA will be responsible for a range of activities, including at least the following:

- (a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's HPMP;
- (b) Assisting the Country in preparation of the Tranche Implementation Reports and Plans as per Appendix 4-A;
- (c) Providing independent verification to the Executive Committee that the Targets have been met and associated tranche activities have been completed as indicated in the Tranche Implementation Plan consistent with Appendix 4-A;
- (d) Ensuring that the experiences and progress is reflected in updates of the overall plan and in future Tranche Implementation Plans consistent with sub-paragraphs 1(c) and 1(d) of Appendix 4-A;

- (e) Fulfilling the reporting requirements for the Tranche Implementation Reports and Plans and the overall plan as specified in Appendix 4-A for submission to the Executive Committee, and should include the activities implemented by the Cooperating IA;
- (f) In the event that the last funding tranche is requested one or more years prior to the last year for which a consumption target had been established, annual tranche implementation reports and, where applicable, verification reports on the current stage of the Plan should be submitted until all activities foreseen had been completed and HCFC consumption targets had been met;
- (g) Ensuring that appropriate independent technical experts carry out the technical reviews;
- (h) Carrying out required supervision missions;
- (i) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Tranche Implementation Plan and accurate data reporting;
- (j) Co-ordinating the activities of the Cooperating IA, and ensuring appropriate sequence of activities;
- (k) In case of reductions in funding for failure to comply in accordance with paragraph 11 of the Agreement, to determine, in consultation with the Country and the Cooperating IA, the allocation of the reductions to the different budget items and to the funding of the Lead IA and each Cooperating IA;
- (l) Ensuring that disbursements made to the Country are based on the use of the indicators;
- (m) Providing assistance with policy, management and technical support when required; Reaching consensus with the Cooperating IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan;
- (n) Reaching consensus with the Cooperating IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan; and
- (o) Timely releasing funds to the country/participating enterprises for completing the activities related to the project.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent entity to carry out the verification of the HPMP results and the consumption of the Substances mentioned in Appendix 1-A, as per sub-paragraph 5(b) of the Agreement and sub-paragraph 1(b) of Appendix 4-A.

#### **APPENDIX 6-B: ROLE OF THE COOPERATING IMPLEMENTING AGENCY**

1. The Cooperating IA will be responsible for a range of activities. These activities are specified in the Plan, including at least the following:

- (a) Providing assistance for policy development when required;

- (b) Assisting the Country in the implementation and assessment of the activities funded by the Cooperating IA, and refer to the Lead IA to ensure a co-ordinated sequence in the activities;
- (c) Providing reports to the Lead IA on these activities, for inclusion in the consolidated reports as per Appendix 4-A; and
- (d) Reaching consensus with the Lead IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan.

#### **APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY**

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$190.97 per ODP kg of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the target specified in row 1.2 of Appendix 2-A has not been met, on the understanding that the maximum funding reduction would not exceed the funding level of the tranche being requested. Additional measures might be considered in cases where non-compliance extends for two consecutive years.

2. In the event that the penalty needs to be applied for a year in which there are two Agreements in force (two stages of the HPMP being implemented in parallel) with different penalty levels, the application of the penalty will be determined on a case-by-case basis taking into consideration the specific sectors that lead to the non-compliance. If it is not possible to determine a sector, or both stages are addressing the same sector, the penalty level to be applied would be the largest.

#### **APPENDIX 8-A: SECTOR SPECIFIC ARRANGEMENTS**

3. During implementation of stage II of the HPMP the Government of Peru could submit a project to phase out the use of HCFC-141b contained in imported pre-blended polyols in the polyurethane foam sector, when proven cost-effective and commercially available low-GWP technology makes it possible.