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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninetieth Meeting
Montreal, 20-23 June 2022
Items 9(a) and (d) of the provisional agenda¹

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, third tranche) UNDP and UNEP

¹ UNEP/OzL.Pro/ExCom/90/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Peru

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage II)	UNDP (lead), UNEP	80 th	67.5% by 2025

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2021	9.39 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2021	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					9.32				9.32
HCFC-123					0.02				0.02
HCFC-142b					0.06				0.06
HCFC-141b in imported pre-blended polyols		2.92							2.92

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	26.88	Starting point for sustained aggregate reductions:	54.79
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	18.14	Remaining:	36.65

(V) BUSINESS PLAN		2022	2023	2024	Total
UNDP	ODS phase-out (ODP tonnes)	4.89	0.0	0.0	4.89
	Funding (US \$)	499,000	0	0	499,000
UNEP	ODS phase-out (ODP tonnes)	0.87	0.0	0.0	0.87
	Funding (US \$)	94,000	0	0	94,000

(VI) PROJECT DATA			2017	2018	2019	2020*	2021	2022	2023 2024	2025	Total
Montreal Protocol consumption limits			24.19	24.19	24.19	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	8.74	n/a
Agreed funding (US \$)	UNDP	Project costs	350,100	0	233,400	0	0	466,800	0	116,700	1,167,000
		Support costs	24,507	0	16,338	0	0	32,676	0	8,169	81,690
	UNEP	Project costs	62,400	0	41,600	0	0	83,200	0	20,800	208,000
		Support costs	8,112	0	5,408	0	0	10,816	0	2,704	27,040
Funds approved by ExCom (US \$)		Project costs	412,500	0	0	275,000	0	0	0	0	687,500
		Support costs	32,619	0	0	21,746	0	0	0	0	54,365
Total funds requested for approval at this meeting (US\$)		Project costs						550,000			550,000
		Support costs						43,492			43,492

*The second tranche was expected to be submitted in 2019.

Secretariat's recommendation	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Peru, UNDP as the lead implementing agency has submitted a request for funding for the third tranche of stage II of the HCFC phase-out management plan (HPMP), at a total cost of US \$593,492, consisting of US \$466,800, plus agency support costs of US \$32,676 for UNDP, and US \$83,200, plus agency support costs of US \$10,816 for UNEP.² The submission includes a progress report on the implementation of the second tranche, the verification report on HCFC consumption for 2020 to 2021, and the tranche implementation plan for 2022 to 2024.

Report on HCFC consumption

2. The Government of Peru reported a consumption of 9.39 ODP tonnes of HCFC in 2021, which is 65 per cent below the HCFC baseline for compliance. The 2017-2021 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Peru (2017-2021 Article 7 data)

HCFC	2017	2018	2019	2020	2021	Baseline
Metric tonnes (mt)						
HCFC-22	401.40	358.52	292.76	223.75	169.39	433.29
HCFC-123*	0.00	0.00	0.00	0.84	0.79	0.00
HCFC-124	0.20	0.34	0.00	0.00	0.00	2.77
HCFC-142b	3.74	1.78	2.41	0.00	0.93	18.15
Total (mt)	405.34	360.64	295.17	224.59	171.11	470.46
HCFC-141b in imported pre-blended polyols**	381.25	266.22	132.96	43.69	26.54	***253.73
ODP tonnes:						
HCFC-22	22.08	19.72	16.10	12.31	9.32	23.85
HCFC-123*	0.00	0.00	0.00	0.02	0.02	0.00
HCFC-124	0.00	0.01	0.00	0.00	0.00	0.06
HCFC-142b	0.24	0.12	0.16	0.00	0.06	1.18
Total (ODP tonnes)	22.32	19.84	16.26	12.33	9.40	26.88
HCFC-141b in imported pre-blended polyols**	41.94	29.28	14.63	4.81	2.92	***27.91

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

** Country programme implementation reports.

*** Starting point established in the Agreement with the Executive Committee.

3. HCFC consumption in Peru has steadily decreased during the last five years, due to the implementation of activities under the HPMP, including the application of the import/export licensing and quota system, a gradual transition toward alternative technologies in the refrigeration and air-conditioning (RAC) sector, and a ban on imports of pure HCFC-141b used to clean refrigeration circuits since 1 January 2017. In 2019, the relatively larger reduction of HCFC-22 was due to an increase in the price of the refrigerant compared to its alternatives, while the 50 per cent reduction in HCFC-141b contained in imported pre-blended polyols was due to higher imports of similar systems based on HFC, HFO and cyclopentane blowing agents. Furthermore, the effects of the pandemic and an economic depression in the country caused additional reductions in HCFC imports for 2020 and 2021.

Country programme (CP) implementation report

4. The Government of Peru reported HCFC sector consumption data under the 2021 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

² As per the letter of 7 April 2022 from the Ministry of Production of Peru to UNDP.

Verification report

5. The verification report confirmed that the Government is implementing an operational licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs reported under Article 7 of the Montreal Protocol for 2020 to 2021 was correct (as shown in Table 1 above). Furthermore, recommendations from the previous verification report were addressed during the implementation of the second tranche. The verification report recommends that the Government continue to review imports of HCFC-123 as a precautionary measure and to monitor the corresponding HCFC-123-based equipment installed until the complete phase-out of HCFCs. In addition, improving the import control system for polyols pre-blended with HCFCs or HFCs was recommended. UNDP confirmed that the Government of Peru was working with UNDP and UNEP to follow up the recommendations of the verification report.

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

Legal framework

6. Since 2020, the Government of Peru has issued five Directorial Resolutions related to the licensing and import quota system for the control of HCFCs under the Montreal Protocol and incorporated the commitments of the Kigali Amendment into national regulations through Supreme Decree No. 019 2021 from the Ministry of Production (PRODUCE).

7. HFCs were included in the licensing system; the 2022 Harmonized System (HS) codes were adopted by the customs. A total of 98 customs officers, customs brokers, and importers were trained on the updated HS codes in 2021, and 293 customs officers in 2022. Furthermore, 20 customs officers directly involved in import procedures were trained on controls for HCFCs and HCFC-based equipment, and on measures to prevent illegal trade, including risk management procedures. Customs checkpoint officers received official notes on controls for ozone-depleting substances (ODS) and ODS-based equipment together with a Customs Officer's Quick Tool for screening ODS; two additional multi-refrigerant identifiers were acquired and will be delivered to the customs.

8. In coordination with the Technical Standards Institute and based on the ISO standards for refrigeration systems and heat pumps, seven national standards were adopted in 2020 to regulate the RAC servicing sector. These national standards establish safety requirements for persons and property, provide guidance for the protection of the environment and establish procedures for the operation, maintenance, and repair of refrigeration systems and the recovery of refrigerants. These standards further provide criteria for the designation and safety classification of refrigerants and establish requirements for the construction, characteristics and performance of refrigerated display cabinets used in the sale and display of foodstuffs.

9. In coordination with the Ministry of Labour, a Standard of Labour Competence of Good Practices in Refrigeration and Air-Conditioning (RDG No. 072-2020-MTPE/3/19) and evaluation instruments (RDG No. 095-2021-MTPE/3/19) were approved.

Refrigeration servicing sector

10. During the second tranche, the following activities were implemented:

- (a) *Application of good refrigeration practices and procedures in the use of alternative refrigerants with low global-warming potential (GWP):* 35 sets³ of equipment, tools and instruments for handling flammable refrigerants and for recovery of refrigerants were delivered to the Peruvian Association of Refrigeration, Air-Conditioning and Ventilation;

³ Each set includes one unit of: recovery equipment for HCFCs and HFCs, recovery cylinder, vacuum pump, part kit for repairing compressors and oil bottles, digital charge scale, nitrogen blower kit, leak detector; and two kits of manometers with standard hoses, small tools and instruments, and personal safety equipment.

122 technicians were trained in good refrigeration servicing practices and the use of low-GWP refrigerants; 164 technicians were trained in 11 virtual workshops on electronics applied in the RAC sector, the safe handling of hydrocarbon (HC), ammonia, and trans-critical carbon dioxide (CO₂), good practices, and refrigerant recovery and recycling (R&R); 23 instructors were trained to be certified under the labour competency standard; two training video modules and two training manuals were issued, both on good practices in refrigeration, including flammable refrigerants, specialized welding, and monitoring of leaks;

- (b) *Strengthening formal education for refrigeration technicians:* All the National Industrial Work Training Service (SENATI) centres updated their syllabi in 2020 to incorporate good practices in handling HCFCs and low-GWP alternative refrigerants, including natural refrigerants; a baseline of available tools and equipment is being defined; and a preliminary list of tools and equipment⁴ to strengthen the 11 selected RAC technical training institutes was drafted;
- (c) *Establishment of the R&R centres:* Acquisition, delivery, set-up and training in the use of equipment⁵ for the operation of three recycling centres in the capital city (Lima) and two in other locations were completed; and seven virtual training workshops on R&R were held for 130 RAC technicians;
- (d) *Technical assistance for the adoption of non-ODP, low-GWP technologies in commercial refrigeration end-users:* A desk review of end-users from the supermarket, agroindustry, and warehouse sectors was undertaken to identify the stakeholders and technical requirements for the conversion/replacement of HCFC-based RAC systems in key sectors with trans-critical CO₂; and
- (e) *Public awareness programme to promote HCFC phase-out:* Four virtual awareness-raising seminars on HCFC phase-out and low-GWP alternatives were held for a total of 302 participants from public sector authorities, end-users, RAC service technicians, importers, training institutes and universities; digital material⁶ was developed and uploaded to virtual platforms by PRODUCE, UNDP, and technical institutes.

Project implementation and management unit (PMU)

11. The PMU, established within the PRODUCE, reports directly to the national ozone unit (NOU), with UNDP's oversight and guidance. The PMU is headed by a project manager and supported by an administrative assistant. Technical support is delivered by national consultants and one international expert in RAC. Expenditures incurred by the PMU amount to US \$21,000 and are distributed as follows: project coordinator (US \$11,000), project assistant (US \$3,000), and verification of HCFC consumption (US \$7,000).

⁴ A preliminary list of equipment to be procured and distributed among the training centres includes: refrigerant recovery machines, R-410A-based air conditioners, cylinders of refrigerants (R-410A and HFC-134a) and pressured gases (nitrogen, oxygen and acetylene), vacuum pumps, refrigerant recovery cylinders, welding kits, electronic scales, leakage detectors for halogenated refrigerants, compressors, condensers, evaporators, filters, and other components of refrigeration systems, and small instruments and tools.

⁵ The list of equipment procured for the R&R centres includes: 15 units of R&R equipment for the most common fluorinated refrigerants, five electronic charging precision scales, 175 units of recovery cylinders and tanks of different sizes, 20 sets of manifold gauges and hoses, and 10 units of the following items: spark-free vacuum pump, refrigerant analyser to test a wide variety of refrigerants, digital thermometer, and electronic leak detector.

⁶ The awareness material covers low-GWP alternatives used in the RAC sector, certification for RAC technicians, R&R, and country commitments for HCFC phase-out.

Level of fund disbursement

12. As of April 2022, of the US \$687,500 approved so far (i.e., US \$583,500 for UNDP and US \$104,000 for UNEP), US \$486,272 (71 per cent) had been disbursed (i.e., US \$398,970 for UNDP and US \$87,302 for UNEP), as shown in Table 2. The balance of US \$201,228 will be disbursed in 2022-2024.

Table 2. Financial report of stage II of the HPMP for Peru (US \$)

Agency	First tranche		Second tranche		Total	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
UNDP	350,100	335,093	233,400	63,877	583,500	398,970
UNEP	62,400	62,302	41,600	25,000	104,000	87,302
Total	412,500	397,395	275,000	88,877	687,500	486,272
Disbursement rate (%)	96		32		71	

Implementation plan for the third tranche

13. The following activities will be implemented between June 2022 and December 2024:
- (a) *Update and reinforcement of the legal framework:* Strengthening regulatory procedures for compliance with the HCFC phase-out strategy through the training of 70 customs officers involved in import procedures for HCFCs and HCFC-based equipment; reproduction of guidelines and quick tools to be distributed among participants of the training workshops; monitoring the application of the import/export HCFC licensing and quota system, and monitoring the application of the enhanced HS customs codes (UNEP) (US \$23,600);
 - (b) *Technical and institutional support for the operationalization of the certification system:* Hiring a specialist to guide the process; organizing a study visit to Colombia for the representatives of the NOU, RAC associations, and training institutes to learn from the experiences in the certification of RAC technicians; promoting the register of potential certifiers⁷ under the Ministry of Labour; encouraging RAC technicians to participate in the process and producing guidelines and manuals in preparation for certification; developing a multi-channel awareness campaign on the certification process (in-person workshops, brochures, and e-media); certifying at least 200 technicians under the labour competency standard, with assessment of the results (UNEP) (US \$39,600);
 - (c) *Technical assistance for the adoption of safety standards* in the introduction of RAC equipment based on non-ODS and zero/low-GWP refrigerants (including flammable refrigerants), and reproduction of 500 sets of guidelines (UNEP) (US \$20,000);
 - (d) *Application of good refrigeration practices and procedures in the use of low-GWP alternative refrigerants:* Organizing four training workshops on the safe handling of HC refrigerants for 100 RAC technicians; organizing 10 training workshops (six in Lima and four in the provinces) for 150 technicians and 10 trainers using the redesigned course on good practices in servicing HCFCs and alternative technologies; designing and printing material related to good refrigeration practices; initiating the procurement and distribution of equipment and tools for the safe handling of HCs (UNDP) (US \$79,016);
 - (e) *Strengthening formal education for refrigeration technicians:* Completing the acquisition and distribution of equipment⁸ and tools for 11 selected institutions (UNDP) (US \$44,167);

⁷ Potential certifying centres include the RAC technical training institutes, private enterprises, and the RAC technicians' association. The monitoring of these centres is under the jurisdiction of the Ministry of Labour.

⁸ As per the acquisition process conducted in the second tranche.

- (f) *Establishment of a refrigerant recovery, recycling and reclaiming scheme:* Conducting procurement of the second batch of equipment⁹ for five HCFC-22 R&R centres (three in Lima, one in Piura, and one in Arequipa); providing both virtual and in-person assistance from an international consultant; training 150 technicians in refrigerant recovery, recycling and reclaiming; and assessing technical feasibility and costs and benefits of establishing one reclaiming unit for the most common refrigerants in the market (UNDP) (US \$184,750);
- (g) *Promoting low-GWP alternatives for the cold chain:* Conducting three training seminars, each for at least 75 representatives of commercial refrigeration end-users; developing an information brochure about good RAC servicing practices for supermarkets, agroindustry, and warehouses, including a selection of case studies to show the performance of systems with trans-critical CO₂, among other low-GWP technologies; developing a cost-benefit analysis in at least four commercial end-users to determine the best option for replacing their RAC systems; and promoting volunteer agreements for the conservation, conversion, and appropriate disposal of HCFC-based selected equipment within the sub-sector (UNDP) (US \$75,000);
- (h) *Promotion of alternatives for the reduction of HCFC consumption and the use of RAC equipment based on low-GWP refrigerants in key sectors:* Assessing awareness requirements; designing awareness material; ensuring the reproduction and distribution of awareness material; coordinating specific awareness efforts; and organizing awareness-raising campaigns on HCFC phase-out (UNDP) (US \$39,867); and
- (i) *PMU:* Monitoring projects under stage II of the HPMP; preparing annual progress reports; holding meetings with stakeholders; providing external verification; presenting a verification report and annual implementation plans (UNDP) (US \$44,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

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

Legal framework

14. The Government of Peru has already issued HCFC import quotas for 2022 at 16.97 ODP tonnes, which is lower than the 2021 HCFC import quota and the Montreal Protocol control targets.

Refrigeration servicing sector

15. On the question of the Government's plans to develop specific regulations to support refrigerant R&R, UNDP explained that the matter was still under discussion with relevant stakeholders. In providing information on how the R&R network would be operationalized, UNDP explained that technicians could either sell the contaminated refrigerant (for 10 per cent of the current fluid price) or recycle it at a

⁹ The tentative procurement list for the second batch of equipment includes: four refrigerant recovery machines and 10 units of R&R equipment, both suitable for use with HCFCs, HFCs, and other blends; 175 rechargeable or refillable cylinders of different sizes to store and transport refrigerant gases; five electronic scales; 10 units of other equipment and instruments (i.e., vacuum pumps, refrigerant identifiers for single and blended refrigerants, digital thermometers, sets of two-way gauges and two-hoses). Additionally, each centre will provide a counterpart contribution of equipment, including the cleaning and inspecting systems of cylinders, containers for contaminated oil, dust vacuum, hot air blower, and labels to identify recycled HCFC-22.

30 per cent lower cost than buying virgin refrigerant. The centres would lend or rent recovery equipment and storage cylinders to technicians, depending on the volume of gas to be collected from the RAC system. UNDP noted that the factors driving the successful implementation of the R&R scheme included convenience, refrigerant prices, availability of recovery equipment and storage cylinders on demand, training, awareness-raising, and the imminent scarcity of HCFC-22. UNDP also clarified that although the acquired R&R equipment could manage both HCFCs and HFCs already present in the local market, the initial focus should be on HCFC-22. After gaining experience with logistics and acquiring additional equipment, cylinders, and tools the R&R scheme could be expanded to other refrigerants. The estimated R&R volume for the initial period is around 5,000 kg of HCFC-22 per year.

16. In response to a query on the operationalization of certification of RAC technicians, UNEP explained that although the certification scheme was voluntary, there existed a regulation attributing jurisdiction for its enforcement to the Ministry of Labour. Therefore, the certifying centres must be registered with the Ministry of Labour, which would monitor the certification process. Courses on good practices would strengthen the skills needed by technicians to undergo the certification process. Although technicians must pay for certification, it represents an opportunity for them to get their previous knowledge and experience recognized, find better-paid jobs, and gain more clients.

17. Regarding support provided to commercial and industrial end-users, the NOU will promote voluntary agreements for HCFC phase-out between PRODUCE and the enterprises. In addition, UNDP will provide technical assistance to enterprises interested in developing procedures for refrigerant conservation, conversion or replacement, and appropriate disposal of HCFC-based equipment. However, given that the country's regulations do not meet the requirements set out in decision 84/84, UNDP confirmed that there would be no transfer of economic incentives to the end-user sector.

Gender policy implementation¹⁰

18. Consistent with the mandate to promote gender equality, the Government of Peru has streamlined gender considerations into its work under the Montreal Protocol. Some of the gender-specific activities that were carried out included specific training workshops for women; efforts made toward achieving gender balance among the recruited experts, trainers, and training workshop participants; and the introduction of gender considerations into training sessions and training materials. In addition, the personnel engaged in HPMP monitoring and evaluation has the required gender competence to identify progress and challenges related to gender mainstreaming and its connection with overall project results. Consequently, all reporting captures gender-related progress, impact on men and women, and related challenges both in quantitative and qualitative ways.

Sustainability of the HCFC phase-out

19. The ban imposed on the import of pure HCFC-141b since 1 January 2017 has resulted in the phase-out of the use of this substance for cleaning RAC systems in the refrigeration servicing sector. The Government of Peru has worked with the Customs Department and the technical training institutes to ensure that information related to the Montreal Protocol is included in their regular training programmes. The Customs Department has also included in the curriculum of its training institute relevant information on the Montreal Protocol and other environmental agreements. In the refrigeration servicing sector, SENATI has updated its study syllabus in addition to the regular programme on good servicing practices already being provided by the technical training institutes. The standard for technician certification has been approved by the Ministry of Labour and its implementation is beginning. Planned activities for awareness-raising campaigns on HCFC phase-out, providing technical assistance to end-users (focused on the cold chain), and delivering equipment and training to the five R&R centres will all have an impact on demand for HCFC-22. All these measures will help ensure the sustainability of HCFC phase-out.

¹⁰ Decision 84/92(d) requested bilateral and implementing agencies to apply the operational policy on gender mainstreaming throughout the project cycle.

Conclusion

20. The HCFC import, licensing and quota system established by the Government of Peru is operational and the country is in compliance with the Montreal Protocol and its Agreement with the Executive Committee. A ban on the import of pure HCFC-141b came into effect on 1 January 2017. The HPMP is progressing. The customs have adopted the 2022 HS codes and customs officers received information on the updated codes. Training institutes and R&R centres continue to be strengthened with equipment support and refrigeration technicians continue to be trained. A voluntary certification scheme for technicians is in progress and is expected to be fully operational by the end of the third tranche implementation. The adoption and implementation of safety standards and guidelines for flammable refrigerants is progressing and will be completed during the third tranche. Fund disbursement for the second tranche has reached 32 per cent, and the aggregated disbursement represents 71 per cent of the total budget approved. Activities planned for the third tranche will enable the country to continue meeting its targets and to sustain the results so far achieved.

RECOMMENDATION

21. The Fund Secretariat recommends that the Executive Committee take note of the progress report on the implementation of the second tranche of stage II of the HCFC phase-out management plan (HPMP) for Peru; and further recommends blanket approval of the third tranche of stage II of the HPMP for Peru, and the corresponding 2022-2024 tranche implementation plan, at the funding levels shown in the table below.

	Project title	Project funding (US \$)	Support costs (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage II, third tranche)	466,800	32,676	UNDP
(b)	HCFC phase-out management plan (stage II, third tranche)	83,200	10,816	UNEP