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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-third Meeting
Montreal, 27– 31 May 2019

PROJECT PROPOSAL: CAMBODIA

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

Phase-out

- HCFC phase-out management plan (stage I, fourth tranche) UNEP and UNDP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Cambodia

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out management plan (stage I)	UNDP, UNEP (lead)	61 st	Total by 2035

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2017	4.64 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2018	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					4.98				4.98
HCFC-141b in imported pre-blended polyol		3.15							3.15

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	15.0	Starting point for sustained aggregate reductions:	15.0
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	15.0	Remaining:	0

(V) BUSINESS PLAN		2019	2020	2021	Total
UNEP	ODS phase-out (ODP tonnes)	0.94	0.00	0.00	0.94
	Funding (US \$)	113,000	0	0	113,000
UNDP	ODS phase-out (ODP tonnes)	1.41	0.00	0.00	1.41
	Funding (US \$)	161,250	0	0	161,250

(VI) PROJECT DATA			2010	2011-2012	2013	2014	2015	2016	2017-2018	2019	2020-2021	2022	2023-2024	2025	2026-2029	2030	2031	Total	
Montreal Protocol consumption limits			n/a	n/a	15.0	15.0	13.5	13.5	13.5	13.5	9.75	9.75	9.75	4.88	4.88	0.38	0.38	n/a	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	15.0	15.0	13.5	13.5	13.5	13.5	9.75	9.75	9.75	4.88	4.88	0.38	0.38	n/a	
Agreed funding (US \$)	UNDP	Project costs	200,000	0	200,000	0	0	100,000	0	150,000	0	0	0	0	0	0	0	0	650,000
		Support costs	15,000	0	15,000	0	0	7,500	0	11,250	0	0	0	0	0	0	0	0	48,750
	UNEP	Project costs	150,000	0	100,000	0	0	150,000	0	100,000	0	200,000	0	200,000	0	0	0	50,000	950,000
		Support costs	19,500	0	13,000	0	0	19,500	0	13,000	0	26,000	0	26,000	0	0	0	6,500	123,500
Funds approved by ExCom (US \$)		Project costs	350,000	0	300,000	0	0	250,000	0	0	0	0	0	0	0	0	0	0	900,000
		Support costs	34,500	0	28,000	0	0	27,000	0	0	0	0	0	0	0	0	0	0	89,500
Total funds requested for approval at this meeting (US \$)		Project costs	0	0	0	0	0	0	0	250,000	0	0	0	0	0	0	0	0	250,000
		Support costs	0	0	0	0	0	0	0	0	24,250	0	0	0	0	0	0	0	0

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Cambodia, UNEP as the lead implementing agency, has submitted a request for funding for the fourth tranche of stage I of the HCFC phase-out management plan (HPMP), at a total cost of US \$274,250, consisting of US \$100,000, plus agency support costs of US \$13,000 for UNEP, and US \$150,000, plus agency support costs of US \$11,250 for UNDP.¹ The submission includes a progress report on the implementation of the third tranche and the tranche implementation plan for 2019 to 2022.

Report on HCFC consumption

2. The Government of Cambodia reported a consumption of 4.64 ODP tonnes of HCFC in 2017 and estimated a consumption of 4.98 ODP tonnes for 2018, which is 67 per cent below the HCFC baseline for compliance. The 2014-2018 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Cambodia (2014-2018 Article 7 data)

HCFC	2014	2015	2016	2017	2018*	Baseline
Metric tonnes						
HCFC-22	203.01	211.74	82.13	84.28	90.53	388.8
HCFC-123	1.14	2.13	0.00	0.00	0.00	0.0
Total (mt)	204.15	213.87	82.13	84.28	90.53	388.8
HCFC-141b in imported pre-blended polyols**	-	-	-	8.40	28.64	-
ODP tonnes						
HCFC-22	11.17	11.65	4.52	4.64	4.98	15.0
HCFC-123	0.02	0.04	0.00	0.00	0.00	0.0
Total (ODP tonnes)	11.19	11.69	4.52	4.64	4.98	15.0
HCFC-141b in imported pre-blended polyols**	-	-	-	0.92	3.15	-

* Country programme (CP) data submitted on 3 April 2019.

** Based on CP data.

3. The HCFC-22 consumption decreased significantly in 2016 compared to the 2015 consumption due to the following reasons: the replacement of HCFC-22-based equipment in the ice-making industry to ammonia-based equipment; the strict enforcement of the licensing system; the impact of the activities being implemented under the HPMP for the servicing sector (i.e., training in good servicing practices had prompted technicians to use nitrogen for flushing instead of HCFC-22; and imports of non-HCFC-based air-conditioning equipment (i.e., R-410A) since 2012).

4. The slight increase in consumption of HCFC-22 in 2018 was attributed to an expansion of condominium construction in Phnom Penh where HCFC-22-based air-conditioners were installed. To address this, the Government has included a provision to ban the import of HCFC-based refrigeration and air-conditioning (RAC) equipment starting 1 January 2020 in amended ODS regulations.

5. HCFC-22 imports for the first quarter of 2019 (29.594 mt, 1.63 ODP tonnes) indicate a slight increase from the import amount during the same period in 2018 (28.365 mt, 1.56 ODP tonnes). The Government is negotiating with importers to limit the import of HCFC-22-based air-conditioners to below 30,000 units in 2019, which is lower than the number of units imported in 2018.

6. Consumption of HCFC-141b in imported pre-blended polyols was reported in 2017 and 2018 due to one enterprise manufacturing sandwich panels identified in 2017. Based on discussions with the National Ozone Unit (NOU), the enterprise had stopped using HCFC-141b in its manufacturing process as of

¹ As per the letter of 12 March 2019 from the Ministry of Environment of Cambodia to UNEP.

March 2019, and completed its conversion to cyclopentane technology with its own financial resources. HCFC-123 has not been imported into the country since 2016 due to preventive maintenance of equipment using HCFC-123.

Country programme (CP) implementation report

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

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

Legal framework

8. The Government of Cambodia revised the Sub-decree on ODS Management,² to add provisions requiring a license for the export/import of ODS, HFCs, other refrigerants in bulk, and all types of RAC equipment using any type of refrigerants; and including provisions for data reporting and monitoring systems for these imports. The amended Sub-decree also includes a ban on the import of HCFC-based RAC equipment from 1 January 2020. It incorporates HFC phase-down obligations and would apply the quota system to the import of HFCs and blends in bulk. This revised Sub-decree is in its final review process and is expected to be approved by the Council of Ministers for implementation and enforcement by September 2019.

9. Three training workshops to strengthen the capacity of enforcement officers in monitoring and controlling HCFC import and export were conducted for 121 Customs and enforcement officers of the General Department of Customs and Excise, CamControl and Anti-Economic Crime Police Department. The Ministry of Environment (MOE) continued to collaborate with the General Department of Customs and Excise to monitor the use of refrigerant identifiers received under the HPMP. The Government hosted a border dialogue to strengthen the cooperation in ODS and HFCs trade control, participated by 31 Ozone and Customs officers from Cambodia and Viet Nam.

Refrigeration servicing sector

10. Seven training workshops on good refrigeration servicing practices including safe handling of air-conditioners using HFC-32 and R-290 refrigerants for 259 RAC technicians were conducted; 16 master trainers from vocational schools and four MOE staff participated in a training on safe management, installation and servicing of R-290-based room air-conditioners.

11. The MOE worked with the Department of Standard and Curriculum of the Ministry of Labour and Vocational Training, and vocational training schools and finalized the guidelines for skill standards and certificate testing for RAC technicians, which was approved on March 2019. These guidelines will enable the Government to implement its competency-based assessment certification programme for technicians without formal education/training and those who are enrolled/received training in vocational schools. A database of trained and certified technicians is currently being developed; and three awareness workshops were conducted to outreach the certification programme for RAC technicians.

12. This certification will be issued by the vocational training schools that have complied with the criteria and been accredited to be the assessment centre.

13. Six vocational training institutes and 32 RAC servicing workshops received equipment and tools (e.g. vacuum pump, manifold gauges, leak detector, servicing tool boxes, recovery machine and cylinders). The implementation of the equipment replacement programme for residential air-conditioners was

² The amended law is now referred to as the Sub-decree on ODS and Refrigerant Management.

discussed with importers of RAC equipment and servicing workshops; eligibility criteria for replacement were finalized and disseminated to servicing workshops; and awareness training on non-ODS low-global warming potential (GWP) technology were conducted for end-users, suppliers and technicians. As of February 2019, the Government provided incentives to replace 57 units of HCFC-22-based air-conditioners with HFC-32-based residential air-conditioners that were installed at end-users' premises.

14. Public awareness, and information, education and communication activities (i.e., awareness workshops, awareness program broadcasting and distribution of information materials) were conducted.

Project implementation and monitoring unit (PMU)

15. The PMU is embedded within the NOU and is under the overall supervision of the head of the NOU. It consists of one full-time assistant and three part-time staff to support the implementation of the HPMP activities.

Level of fund disbursement

16. As of March 2019, of the US \$900,000 approved so far, US \$783,395 had been disbursed (US \$356,660 for UNEP and US \$426,734 for UNDP) as shown in Table 2. The balance of US \$116,605 will be disbursed in 2019-2020.

Table 2. Financial report of stage I of the HPMP for Cambodia (US \$)

Tranche		UNEP	UNDP	Total	Disbursement rate (%)
First tranche	Approved	150,000	200,000	350,000	100
	Disbursed	150,000	200,000	350,000	
Second tranche	Approved	100,000	200,000	300,000	100
	Disbursed	100,000	200,000	300,000	
Third tranche	Approved	150,000	100,000	250,000	53
	Disbursed	106,660	26,734	133,394	
Total	Approved	400,000	500,000	900,000	87
	Disbursed	356,660	426,734	783,394	

Implementation plan for the fourth tranche of the HPMP

17. The following activities will be implemented between March 2019 and December 2022:
- (a) Submission of the final draft of Sub-decree on ODS and Refrigerant Management for the approval by the Council Ministers, expected by September 2019; enforcement of the Sub-decree on ODS and Refrigerant Management through online licensing and quota system for HCFCs; and development of a quick guide for the implementation of national standards on RAC in local language (UNEP) (US \$5,000);
 - (b) Training for 60 enforcement officers to include new provisions for the licensing system under the Sub-decree on ODS and Refrigerant Management especially as it relates to HFCs, the ban on imports of HCFC-based equipment from 1 January 2020, and mandatory labelling of HCFC cylinders in the domestic market; and establishment of a joint inspection team to monitor refrigerants sold in the local market to prevent illegal ODS trade (UNEP) (US \$10,000);
 - (c) Continued consultations with the Department of Standard and Curriculum and the competency assessment centres to launch competency assessment and certification of RAC technicians; and development and maintenance of database of trained and certified technicians (UNEP) (US \$5,000);

- (d) Five training workshops on good practices for 150 RAC technicians and one train-the-trainer workshop on good practices for low-GWP technology for 30 trainers (UNEP) (US \$35,000);
- (e) Provision of equipment/tools to 50 workshops (e.g., vacuum pump, manifold gauges, leak detector, electronic scale, vacuum meter and servicing tool box) and to five training centres (e.g., vacuum pump, manifold gauges, leak detector, electronic scale, vacuum meter, servicing tool boxes, recovery machine and recovery cylinder); training on the use of these equipment/tools and other technical issues related to the recovery and recycling programme; and information outreach about the refrigerant reclamation programme to technicians (UNDP) (US \$50,000);
- (f) Provision of incentives to replace an additional 850 units of HCFC-based air-conditioners with low-GWP-based systems to end users; awareness programmes to the public on energy efficiency benefits from non-ODS low-GWP technology, and outreach the replacement incentive programme for participating workshops, retail sellers and importers (UNDP) (US \$100,000);
- (g) Information, education and communications activities on OzonAction tools and materials and demonstration of application to support HCFC phase-out activities for enforcement officers and RAC trainers of vocational schools (UNEP) (US \$20,000); and
- (h) Project coordination and management (UNEP) (US \$25,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Report on HCFC consumption

18. With regard to the reported consumption of HCFC-141b in imported pre-blended polyols, UNEP confirmed that there was no license issued for its import in 2019. In addition, the enterprise that imported such polyols in 2017 and 2018 had already converted with its own resources and no other enterprise using these pre-blended polyols systems had been identified. UNEP also mentioned that with the implementation of the new Sub-decree, imports of HCFC-141b contained in imported pre-blended polyols will be strictly controlled and eventually banned.

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

Legal framework

19. The Government of Cambodia has already issued HCFC import quotas for 2019 at 9.75 ODP tonnes, which is 27.7 per cent lower than the Montreal Protocol control targets and the maximum allowable level under the Agreement with the Executive Committee.

20. The revised Sub-decree on ODS and Refrigerant Management will ensure the sustainability of the phase-out of HCFCs in Cambodia.

Refrigeration servicing sector

21. UNEP explained that the guidelines for technician certification in the country have been adopted only in March 2019. With these guidelines, the Government of Cambodia will have the framework to implement the competency-based assessment certification programme which will be closely linked to new

requirements for renewal of business licenses (i.e., a refrigerant service workshop should have at least one certified RAC technician), and the restriction of sales of refrigerants only to registered workshops or certified technicians. It was also clarified that the competency assessment is for both the informal technicians and those enrolled or have received formal education.

22. In responding to queries related to the end-user incentive programme being implemented by UNDP, UNEP mentioned that the recipients of the new HFC-32 equipment had reported energy savings resulting from the use of this equipment. New beneficiaries targeting school, hospitals, and other public buildings are being explored for the next tranche.

23. With regard to the long-term sustainability of the refrigeration training programme, UNEP mentioned that training on good practices in refrigeration will continue to be implemented through the strengthened vocational institutes and the refrigeration associations. In addition, the technician certification programme will further ensure that updated training courses would be made available for certified technicians.

Project implementation and monitoring unit (PMU)

24. UNEP explained that the PMU plays an important role in the HPMP, and the costs associated with the PMU are related to the planning, implementation and monitoring of the HPMP. The Government of Cambodia has maintained separate records for PMU and institutional strengthening to ensure no duplication of responsibilities and expenditures.

Conclusion

25. The Secretariat noted that Cambodia has an effective licensing and quota system, and continues to progress in the implementation of the activities approved under the HPMP. The finalisation and eventual approval of the new Sub-decree on ODS and Refrigerant Management puts in place a number of regulations that include the control of all refrigerants including HFCs. The competency-based assessment certification programme will further control the use of ODS refrigerants as it will require selling refrigerants only to certified technicians. Sustainability of the training on good practices in refrigeration will be assured through the strengthened vocational institutes and the refrigeration associations. The level of fund disbursement is 87 per cent. The activities planned for the fourth tranche of the HPMP will continue to support the strategy for the servicing sector in Cambodia.

RECOMMENDATION

26. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the third tranche of stage I of the HCFC phase-out management plan (HPMP) for Cambodia; and further recommends blanket approval of the fourth tranche of stage I of the HPMP for Cambodia, and the corresponding 2019-2022 tranche implementation plan, at the funding levels shown in the table below, on the understanding that:

- (a) Cambodia had consumption in the servicing sector only; and
- (b) That the end-user incentive programme would enhance the sustainability of the training of servicing technicians and that end users would provide co-financing to participate in the programme.

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, fourth tranche)	100,000	13,000	UNEP
(b)	HCFC phase-out management plan (stage I, fourth tranche)	150,000	11,250	UNDP
