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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-second Meeting
Montreal, 3-7 December 2018

PROJECT PROPOSAL: CAMEROON

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) UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
Cameroon

(I) PROJECT TITLE	AGENCY
HCFC phase out plan (stage II)	UNIDO

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2017	38.08 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)							Year: 2017		
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22				0.87	36.77	0.44			38.08

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	88.80	Starting point for sustained aggregate reductions:	77.56
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	20.50	Remaining:	57.06

(V) BUSINESS PLAN		2018	2019	2020	After 2020	Total
UNIDO	ODS phase-out (ODP tonnes)	4.35	0.00	15.00	15.00	34.35
	Funding (US \$)	121,900	0.00	419,144	0	541,104

(VI) PROJECT DATA		2018	2019	2020	2021	2022	2023	2024	2025	Total	
Montreal Protocol consumption		79.92	79.92	57.72	57.72	57.72	57.72	57.72	28.86	n/a	
Maximum allowable consumption (ODP tonnes)		38.08	35.4	32.7	30.1	27.5	24.8	22.2	22.2	n/a	
Project costs requested in principle (US \$)	UNIDO	Project costs	517,750	0	0	786,750	0	0	0	79,000	1,383,500
		Support costs	36,243	0	0	55,073	0	0	0	5,530	96,846
Total project costs requested in principle (US\$)		517,750	0	0	786,750	0	0	0	79,000	1,383,500	
Total support costs requested in principle (US\$)		36,243	0	0	55,073	0	0	0	5,530	96,846	
Total funds requested in principle		553,993	0	0	841,823	0	0	0	84,530	1,480,346	

(VII) Request for funding for the first tranche (2018)		
Agency	Funds requested (US \$)	Support costs (US \$)
UNIDO	517,750	36,243
Total	517,750	36,243
Funding request:	Approval of funding for the first tranche (2018) as indicated above	

Secretariat's recommendation:	Individual consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of Cameroon, UNIDO as the designated implementing agency, has submitted a request for funding for stage II of the HCFC phase-out management plan (HPMP), at the amount of US \$1,497,000, plus agency support costs of US \$104,790 as originally submitted.¹ The implementation of stage II of the HPMP will result in a phase-out of 15.03 ODP tonnes of HCFCs to meet the target of 75 per cent reduction in HCFC baseline consumption by 2025, as originally submitted.

2. The first tranche for stage II being requested at this meeting amounts to US \$437,000, plus agency support costs of US \$30,590, as originally submitted.

Submission of the stage II of the HPMP at the 81st meeting

3. Stage II of the HPMP for Cameroon was previously submitted to the 81st meeting in the amount of US \$4,642,000, plus agency support cost of US \$324,940. The estimated consumption of HCFCs reported in that submission amounted to 1,187 metric tonnes (mt) as shown in Table 1.

Table 1. HCFC-22 consumption by application in 2017 as submitted to the 81st meeting

Application	Consumption (2017) (mt)
Domestic refrigeration	197.0
Residential split	590.2
Residential window	0.0
Commercial air-conditioners	14.5
Other air-conditioners	207.0
Commercial refrigeration - display unit	72.0
Commercial refrigeration - medium temperature installations	31.0
Industrial refrigeration	51.8
Transport refrigeration	15.5
Transport air-conditioning	8.0
Total	1,187.0

4. During the review of the HPMP, the Secretariat noted that the consumption of HCFCs reported in the HPMP and under Article 7 of the Montreal Protocol for 2017, was significantly higher for the applications in use and could not be justified based on technical aspects and demographic trends. For example, 197 mt of HCFC-22 reported for domestic refrigeration was unlikely given that domestic refrigerators do not consume that substance.

5. The Secretariat had detailed discussions with UNIDO on addressing the issues relating to consumption; however, UNIDO informed that additional time was required for checking the consumption data with the Government and the refrigeration and air-conditioning (RAC) associations, and requested to withdraw the project with an understanding that the HPMP would be resubmitted to the 82nd meeting after addressing the issues.

Revised HCFC consumption in 2017

6. UNIDO has resubmitted the HPMP to the 82nd meeting which, *inter alia*, included revision on the HCFC-22 consumption for the years 2015, 2016 and 2017. Table 2 presents the revised consumption of HCFC-22 for the year 2017.

¹ As per the letter of 17 August 2018 from the Ministry of Environment, Protection of Nature and Sustainable Development of Cameroon to UNIDO.

Table 2. Revised HCFC-22 consumption by application in 2017

Application	Population of equipment	HCFC use		
		mt	ODP tonnes	% of total
Residential split	300,000	202.50	11.14	29.2
Residential window	280,000	140.00	7.70	20.2
Commercial air-conditioning	1,650	13.20	0.73	1.9
Chillers	5,030	123.20	6.78	17.8
Commercial refrigeration - display unit	250,000	147.00	8.09	21.2
Commercial refrigeration - medium temperature installations	10,450	15.70	0.86	2.3
Industrial refrigeration	450	10.10	0.56	1.5
Transport refrigeration	5,880	14.70	0.81	2.1
Solvent	n.a.	8.00	0.44	1.2
Other	n.a.	18.00	0.99	2.6
Total		692.40	38.08	100

7. For the resubmission of stage II, import data had been verified by an external consultant indicating that the consumption of HCFC-22 for 2015, 2016 and 2017 was 978 mt (53.79 ODP tonnes), 862 mt (47.41 ODP tonnes), and 692.4 mt (38.08 ODP tonnes), respectively.

8. The Government further clarified that the previous verification report confirmed imports based on visa technique issued by the National Ozone Unit (NOU) and import licenses; after adjustment for double counting of imports by “informal sector”, the actual quantity of imports for 2015, 2016 and 2017 were confirmed by the Government. Based on this, the revised Article 7 and country programme (CP) data for 2015 to 2017 has been submitted in August 2018 to the Ozone Secretariat and the Fund Secretariat, respectively. The Secretariat notes with appreciation the efforts of the Government, UNIDO and national stakeholders on presenting the revised consumption information which is reflective of the national consumption levels and is used as the basis for the project review.

9. Based on the revised HCFC consumption, which is consistent with end-use based estimates in the country, the remaining consumption eligible for funding is 692.4 mt (38.08 ODP tonnes).

Status of implementation of stage I of the HPMP

10. Stage I was approved at the 64th meeting² to meet the 20 per cent reduction from the baseline by 2017 resulting in the phase-out of 20.5 ODP tonnes of HCFCs (i.e., 9.7 ODP tonnes of HCFC-22 and 10.8 ODP tonnes of HCFC-141b), at the amount of US \$1,182,725, plus agency support costs.

Verification of HCFC consumption

11. The verification undertaken during stage II of the HPMP preparation confirmed that the Government of Cameroon continued to implement its licensing and quota system for HCFC imports and exports. The total consumption of HCFCs for 2015, 2016 and 2017 were below the national target in its Agreement with the Executive Committee. The quota for the year 2018 has been issued for 38.08 ODP tonnes.

² UNEP/OzL.Pro/ExCom/64/26

ODS policy and regulatory framework

12. The HCFC imports licensing and quota system has been operational since 2006. A list of controlled substances is defined by the General Trade Schedule (Decision No. 0064/MINDIC/CAB), which was updated to include HCFCs. The Ministry of Environment, Protection of Nature and Sustainable Development through the National Ozone Unit (NOU) issues the permits to import HCFCs to licensed importers. Imports of HCFC 141b in bulk has been banned as of 1 January 2015 following the conversion of HCFC-141b to methyl formate in rigid and flexible foam sectors. Regulations to ban HCFC-141b contained in imported pre-blended polyol is under approval process.

13. As of July 2018, a total of 165 customs and enforcement officers have been trained on the legal and regulatory framework, key aspects of ozone depleting substances (ODS) trade, harmonised coding system, proper labelling requirements and the use of ODS identifiers.

Polyurethane (PU) foam manufacturing sector

14. Six enterprises manufacturing insulation foam for pipes have been successfully converted to methyl formate technology, resulting in the phase-out of 55.90 mt (6.15 ODP tonnes) of HCFC-141b; three of those enterprises also manufacturing commercial refrigeration products converted to methyl formate resulting in the phase-out of an additional 37.4 mt (4.11 ODP tonnes) of HCFC-141b. Further, 4.90 mt (0.54 ODP tonnes) of HCFC-141b that was used for solvent applications and for degreasing by three enterprises was phased out. The conversion of all these enterprises resulted in the phase-out of 98.20 mt (10.80 ODP tonnes) of HCFC-141b as shown in Table 3.

Table 3. Phase-out of HCFC-141b by enterprise

Enterprise	HCFC-141b phased out by use (mt)			Total (mt)
	PU rigid foam pipe	Solvent and degreasing	PU insulation in commercial refrigeration installations	
Equatorial froid	13.90	2.30	16.60	32.80
Pictet	16.80	1.80	0.00	18.60
Lifroidcam	6.90	0.00	12.50	19.40
Ets Ze Eboudena	9.30	0.00	8.30	17.60
Cofic	4.20	0.80	0.00	5.00
Technoclim	4.80	0.00	0.00	4.80
Total	55.90	4.90	37.40	98.20
Total in ODP tonnes				10.80

15. Training, demonstration and awareness-raising activities on the use of methyl formate were undertaken to ensure sustainability of the phase-out.

RAC servicing sector

16. A total of 520 service technicians have been trained through seven training workshops on good servicing practices including reduction in emission of HCFCs and adoption of non-ODS technologies, with an additional 150 technicians foreseen to be trained before the end of 2018. The Government of Cameroon confirmed that they are fully aware of decisions 72/17 and 73/34 on retrofits of air-conditioned equipment with flammable alternative refrigerants. Service sector training programmes cover safe use of flammable refrigerants and do not include retrofit procedures using flammable refrigerants. Implementation of the activities in the RAC servicing sector along with other policy measures and awareness implemented in stage I resulted in the phase-out of 28.68 ODP tonnes, i.e., 18.98 ODP tonnes more than originally proposed.

Status of disbursements

17. As of August 2018, of the total funds of US \$1,182,725 approved so far, US \$1,101,444 had been disbursed. The remaining US \$81,281 will be disbursed by end of 2018. Stage I of the HPMP will be operationally completed by end of 2018; project completion report would be submitted no later than June 2019 and the balances would be returned no later than the 84th meeting.

Table 4. Financial report of stage I of the HPMP for Cameroon (US \$)

Agency	First –third tranches		Fourth tranche		Total	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
UNIDO	1,123,589	1,086,820	59,136	14,624	1,182,725	1,101,444
Disbursement rate (%)	96.7		24.7		93.1	

Stage II of the HPMP

18. Through the implementation of stage II of the HPMP, 15.03 ODP tonnes of HCFC-22 will be phased out in the RAC servicing sector.

Remaining consumption eligible for funding

19. The total reduction of HCFC consumption achieved in stage I is 39.48 ODP tonnes; this includes 28.68 ODP tonnes of HCFC-22 and 10.80 ODP tonnes of HCFC-141b. After reduction of 39.48 ODP tonnes from the starting point of 77.56 ODP tonnes, the remaining consumption eligible for funding would be 38.08 ODP tonnes as shown in the Table 5.

Table 5. Overview of the remaining HCFC consumption eligible for funding (ODP tonnes)

HCFC	Starting point	Reduction in stage I*	Remaining after stage I
HCFC-22	66.76	28.68	38.08
HCFC-141b	10.80	10.80	0.00
Total	77.56	39.48	38.08

*This includes adjustment of remaining consumption eligible for funding by an additional 18.98 ODP tonnes, after reassessment of consumption of HCFC-22 for 2017.

HCFC consumption

20. The Government of Cameroon reported a consumption of 38.08 ODP tonnes of HCFC under Article 7 of the Montreal Protocol in 2017, which is 42.2 per cent below the target of 65.9 ODP tonnes for that year. The 2013-2017 consumption is shown in Table 6. The consumption is decreasing due to the implementation of the phase-out activities in the foam and refrigeration servicing sector included in stage I of HPMP.

Table 6. HCFC consumption in Cameroon (2013-2017 Article 7 data)

HCFC	2013	2014	2015	2016	2017	Baseline
Metric tonnes (mt)						
HCFC-22	1,221.00	1,222.50	978.00	862.00	692.40	1,213.83
HCFC-141b	138.00	9.30	0.00	0.00	0.00	200.43
Sub-total (mt)	1,359.00	1,231.80	978.00	862.00	692.40	1,414.26
HCFC-141b in imported pre-blended polyols*	0.00	11.70	0	0	0	0
ODP tonnes						
HCFC-22	67.16	67.24	53.79	47.41	38.08	66.80
HCFC-141b	15.18	1.02	0.00	0.00	-	22.00
Sub-total (ODP tonnes)	82.34	68.26	53.79	47.41	38.08	88.80
HCFC-141b in imported pre-blended polyols*	0.00	1.29	0	0	0	0

*Country programme data.

21. HCFC is currently consumed predominantly in the RAC sector. Table 2 shows that residential air-conditioners (342.5 mt), chillers (123.2 mt) and commercial refrigeration display unit (147 mt) are the three largest HCFC consuming applications representing 88.4 per cent of the total consumption.

22. The assembly enterprises consumed 15.90 mt (0.87 ODP tonnes) of HCFC-22, used by 12 enterprises that assemble and sell commercial refrigerators and display cases, condensing units, split AC systems, cold rooms and cold stores for fish processing and storage (Table 7). These assemblers import compressors and other components for their products that are often made to order, as well as other commercial refrigeration equipment and provide servicing for these products. In addition, these enterprises use about 8 mt (0.44 ODP tonnes) of HCFC-22 for flushing. It is therefore not possible to distinguish HCFC use for assembly activities from those used as part of servicing.

Table 7. Commercial refrigeration equipment assemblers in Cameroon

Enterprise	Products	Production in 2017 (units)	Consumption **	
			mt	ODP tonnes
Equatorial Froid	Cold room, condenser unit, chiller	760	3.80	0.21
Cofic	Cold room chiller	382	4.00	0.22
Mce	Cold room chiller	72	0.90	0.05
Mci	Chiller	150	1.20	0.07
Lifroicam	Cold room chiller	300	1.50	0.08
Uce Socem*	Cold room condenser unit	2,500	3.20	0.18
Froidcam	Cold room condenser unit	80	0.20	0.01
Froid-Emi	Cold room	121	0.30	0.02
Cofrelec	Equipment for ice	15	0.10	0.01
Ets Ze Eboudena	Equipment for ice	-	0.10	0.01
Tecnoclim	Equipment for ice	180	0.45	0.02
Pictet	Cold room condenser unit	30	0.15	0.01
Total		4,590	15.90	0.87

*Only enterprise that had continuous assembly for over a year.

**HCFC-22 consumption in flushing (8 mt) is not included in the above consumption.

HCFC consumption in the servicing sector

23. There are 327 registered service workshops and an estimated 1,200 non-registered small service workshops typically employing one to three people. The sector has 4,700 service technicians out of which 1,100 belong to a more formal service sector (SMEs) while the rest are not permanently employed. It is expected that the total number of service technicians will be 8,480 (i.e. 1,510 in the formal sector and 6,970 in the informal sector) by 2025.

24. Larger workshops have basic service equipment including some charging machines, and electronic leak detectors. However, the majority of service technicians operate using only basic tools (e.g., refrigerant gauges, basic mechanical tools) resulting in venting of large amounts of refrigerants to the atmosphere. Trade associations, such as the National Association of Refrigeration Engineers and the Cameroon Association of Refrigeration Technicians (AFRICAM), have their activities concentrated in large cities namely Douala and Yaoundé, have many service agencies as members and act as facilitators for technology and information dissemination. As the informal servicing sector is large, majority of practicing technicians are not members of the association. As a result, the association cannot effectively be used for training and information dissemination in other locations.

25. Four training centres were supported under stage I of the HPMP with equipment that can be used for training on flammable low-GWP alternatives. These centres will continue to be used for providing training to technicians. The Government is also planning to implement a certification system for service technicians for better quality of servicing.

Proposed activities in stage II of the HPMP

26. The activities to be implemented during stage II include updating of related policies and regulations, incentive schemes for low-GWP technologies in commercial and industrial RAC applications, enforcement and customs training activities and project management.

Regulatory actions

27. Regulatory instruments will be upgraded to facilitate the introduction of low-global warming potential (GWP) refrigerants, better quality and energy efficient RAC equipment, and increasing awareness of stakeholders and the public. A database for the refrigeration sector will be developed to enable the Government to disseminate information on low-GWP alternatives, particularly hydrocarbons (HCs) and monitor implementation of HCFC phase-out activities in the service sector (US \$200,000).

End-use incentive programme for low GWP technologies in commercial and industrial RAC applications

28. Implementation of an end-use incentive projects for conversion to low-GWP refrigerants is for phase-out of HCFC-22 in the assembly sub-sector. These will include two projects in the fisheries sector and one project each for the commercial and industrial RAC sectors. A feasibility study will be conducted to determine the suitable technology and refrigerant (e.g., ammonia, CO₂, HC). The project includes financial incentive for implementing low-GWP refrigerant technologies in four identified beneficiaries who would provide equivalent co-finance, technical assistance for project design, implementation support, monitoring and information outreach (US \$600,000).

Activities in the RAC servicing sector

29. Technical assistance for servicing sector will include the following:

- (a) Capacity building and training of 200 customs and enforcement officers on enforcement of ODS regulations and monitoring of imports of HCFCs (US \$200,000);
- (b) Upgrading of current “Code of Practice for Refrigeration and Air-conditioning” manual to include revised regulations and recent technical developments and aspects of low-GWP-based equipment and substances (US \$60,000);
- (c) Capacity building for registered service providers/workshops and the informal service providers through 28 training workshops on good and safe servicing practices for 700 technicians including safety aspects related to servicing low-GWP-based equipment; technicians’ certification scheme to complement the training activities; three train-the-trainers workshops for 75 trainers covering safety aspects of HC refrigerants and developments on HFC phase-down; and provision of basic technician’s toolkits (e.g., gauges, vacuum pumps) for participants (US \$200,000); and
- (d) Enhancement of recovery and reclamation of HCFC-22 by providing recovery and reclamation equipment including recovery cylinders for 10 large service enterprises and seven technical institutes/training centres (US \$52,000).

Project management unit (PMU)

30. The PMU, within the NOU at the Ministry of Environment, will manage the implementation of stage II of the HPMP. It will focus on project supervision, financial management of projects, development and maintenance of management information system and administrative functions related to the project implementation. US \$185,000 is requested for project management including awareness and outreach activities including establishment of a Technology Awareness Centre within the proposed PMU.

Total cost of stage II of the HPMP

31. The total cost of stage II of the HPMP for Cameroon amounts to US \$1,497,000, as originally submitted (excluding support costs) to phase-out of 287.92 mt (15.03 ODP tonnes) of HCFC-22 by 1 January 2025; the cost-effectiveness of the project is US \$4.8 per kg in line with decision 74/50. Detailed activities and cost are shown in Table 8.

Table 8. Proposed budget for stage II of the HPMP

Particulars	Agreed cost in US \$
Policy and regulations updating	200,000
Training and capacity building of customs and enforcement officers	200,000
Training of service technicians including updating code of practices	260,000
End-use incentive for low-GWP technology promotion	600,000
Recovery and re-use promotion	52,000
Sub total	1,312,000
PMU	185,000
Total	1,497,000

Activities planned for the first tranche of stage II

32. The first funding tranche of stage II of the HPMP at the total amount of US \$437,000 will be implemented until December 2021 and will include the following activities:

- (a) Initiation of regulations enforcement activities including development of new regulatory measures for HCFC-based equipment and HCFCs import controls, as well as training activities for customs and enforcement officers (US \$200,000);
- (b) Initiation of refrigeration servicing sector training activities (US \$100,000);
- (c) Development of an implementation plan for end-user incentive scheme for commercial and industrial RAC applications for adoption of low-GWP alternatives (US \$60,000);
- (d) Implementation of a recovery and re-use programme (US \$52,000); and
- (e) Project management and monitoring activities (US \$25,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

33. The Secretariat reviewed stage II of the HPMP for Cameroon 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 2018 to 2020 business plan of the Multilateral Fund.

Regulations for HCFC phase-out

34. Upon request for additional information on regulatory interventions that are proposed in stage II, UNIDO informed that the Government is planning to implement a ban on import, installation and sales of HCFC-based RAC equipment by 31 December 2020. Further, they would continue to implement the HCFC quota system, verification of actual imports and related monitoring and reporting, noting that this is critical for sustained achievement of the HPMP targets. UNIDO will report on the steps taken by the Government to strengthen monitoring and reporting of import of HCFCs in line with decision 63/17.

35. The Government is also planning to implement a quality and labelling scheme for controlling purchase of high quality and efficient equipment³ and encouraging importers to promote such equipment in the market; the certification scheme for technicians would be fully implemented by 2022 and would be linked to the training provided to technicians; through the certification process, purchase of refrigerants by certified technicians and code of good service practices is also proposed to be implemented in the country. Recovery and re-use programme that would be initiated during stage II is expected to increase due to reduced supply of HCFC-22 in the country.

36. Through these measures, the Government is committed to achieve their 2025 targets. The costs for policy and regulations updating and database of service enterprise finalisation were reduced from US \$200,000 to US \$150,000 and the costs of training and capacity building of customs enforcement officers were adjusted from US \$200,000 to US \$275,000, for training 260 customs officers and inspectors and providing 25 identifiers.

Promotion of low-GWP technologies

37. Upon a request for clarifications on how safe adoption of HC-based refrigerants would be ensured, UNIDO explained that training of technicians for the safe use of HC have been provided during stage I and will continue during stage II. Further, retrofit of air-conditioning equipment designed for non-flammable refrigerants with HC is discouraged, and the Government is fully aware of decisions 72/17 and 73/34 on safe use of HCs and is in the process of developing certification standards for using flammable refrigerants.

Technical and cost issues related to the servicing sector

Incentive programme for low-GWP technologies in chillers and commercial and industrial refrigeration

38. The Secretariat requested additional clarifications on activity levels and associated costs including co-financing and expected impact on HCFC consumption reduction, noting that the current levels of activities is not commensurate with the funding requirement and its impact. UNIDO clarified that they had consultations on this component with the Government and have revised the activity levels to include 12 chillers or equivalent in large commercial/industrial refrigeration, supermarkets and fisheries industry for adopting ammonia, CO₂-based or HC-based technologies depending upon user requirements. The estimated incentive support per beneficiary would be US \$30,000 with an equivalent amount of co-financing by beneficiaries. Based on this, the estimated costs for the component for incentive to equipment users, technical support for planning, monitoring and outreach amounted to US \$420,000. This incentive programme is expected to result in a direct HCFC-22 phase-out at the beneficiaries and encourage adoption of these technologies in commercial and industrial refrigeration applications that are estimated to consume about 156.9 mt in 2017. The Secretariat also noted that UNIDO would review the implementation plan and present a detailed action plan, keeping in view the project requirements and end-user assessments.

Service sector training and equipment support

39. The Secretariat requested additional information on the levels of training support noting that Cameroon has a growing number of technicians and how the training programme would be linked to certification programme for technicians. UNIDO informed that the certificates would be provided to the technicians after participation in training and tests following the training programme. In addition, UNIDO mentioned that the programme will be structured to provide technical support for safe operations of low-GWP based equipment to commercial equipment assemblers. Based on further review and consultations with the Government, UNIDO revised the total number of trainees to 910 and the total cost for the training programme to US \$354,000.

³ Specific details would be worked out during implementation.

Recovery and reclamation project

40. The Secretariat requested clarifications on plan for implementation of recovery and reclamation given that HCFCs are still available and would continue to be available until 2025. UNIDO clarified that the activity will focus on recovery of refrigerant and re-use; beneficiaries include large service enterprises and technical institutions based on their technical requirements and estimated HCFC-22 use. The overall cost for the programme is US \$69,500.

PMU

41. UNIDO reviewed the project management costs in light of the changes in implementation needs for stage II. Given that the project is expected to be implemented over a period of seven years starting 2019 and would include activities covering many enterprises in the informal sector geographically distributed and two tranche verification reports, project management costs were agreed at US \$115,000 (9 per cent of project costs). Technology awareness centre is not included in this component.

Total project cost and impact

42. Based on the above, the total project costs for stage II of the HPMP of Cameroon is US \$1,383,500, as shown in Table 9 with associated phase-out of 264.27 mt of HCFC-22 (14.53 ODP tonnes), at a cost-effectiveness of US \$4.8 per kg (excluding the cost of the PMU) for achieving a 75 per cent reduction from the baseline by 1 January 2025.

Table 9. Total funding agreed for HPMP stage II of Cameroon

Particulars	Agreed cost in US \$
Policy and regulations updating	150,000
Training and capacity building of customs and enforcement officers	275,000
Training of service technicians	354,000
End-use incentive for low GWP technology promotion	420,000
Recovery and re-use promotion	69,500
Sub total	1,268,500
PMU	115,000
Total	1,383,500

Impact on the climate

43. The proposed activities in the servicing sector, which include better containment of refrigerants through technicians training and provision of equipment, will further reduce the amount of HCFC-22 used for refrigeration servicing. Although a calculation of the impact on the climate was not included in the HPMP, the activities planned in stage II, in particular its efforts to promote low-GWP alternatives in refrigeration and AC applications, and refrigerant recovery and re-use, indicate that the implementation of the HPMP will reduce the emission of refrigerants into the atmosphere, therefore resulting in benefits on the climate. Each kilogram of HCFC-22 not emitted due to better refrigeration practices results in savings of approximately 1.8 CO₂-equivalent tonnes.

Co-financing

44. UNIDO informed that the project component for incentives for promotion of low-GWP alternatives in commercial refrigeration and industrial refrigeration will include co-financing estimated at US \$360,000; the exact estimated amount would be provided during the second tranche request when a detailed plan for implementation of this component would be provided.

2018-2020 draft business plan of the Multilateral Fund

45. UNIDO is requesting US \$1,383,500, plus agency support costs for the implementation of stage II of the HPMP. The total value requested of US \$553,993 including support costs for the period 2018–2020, is US \$12,889 above the amount in the business plan target for 2018–2020.

Draft Agreement

46. A draft Agreement between the Government of the Republic of Cameroon 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

47. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage II of the HCFC phase-out management plan (HPMP) for Cameroon for the period 2018 to 2025 to reduce HCFC consumption by 75 per cent of the baseline in 2025, in the amount of US \$1,383,500, plus agency support costs of US \$96,845 for UNIDO;
- (b) Noting additional phase-out of 18.98 ODP tonnes of HCFC-22 achieved during stage I of the HPMP;
- (c) Noting the commitment of the Government of Cameroon to:
 - (i) Reduce HCFC consumption by 75 per cent of baseline by 2025; and
 - (ii) Issue a ban on the import, sales and installation of HCFC-based equipment and HCFCs other than HCFC-22 by 31 December 2020;
- (d) Further noting:
 - (i) That Cameroon had consumption in the servicing sector only; and
 - (ii) That the financial incentive scheme would enhance the sustainability of adoption of low-GWP technologies and would be co-financed by participating end-users;
- (e) Deducting 14.53 ODP tonnes of HCFCs from the remaining HCFC consumption eligible for funding;
- (f) Approving the draft Agreement between the Government of the Republic of Cameroon and the Executive Committee for the reduction in consumption of HCFCs, in accordance with stage II of the HPMP, contained in Annex II to the present document;
- (g) Approving the first tranche of stage II of the HPMP for Cameroon, and the corresponding tranche implementation plans, in the amount of US \$517,750, plus agency support costs of US \$36,243 for UNIDO, on the understanding that if Cameroon were to decide to proceed with retrofits and associated servicing to flammable and toxic refrigerants in refrigeration and air-conditioning equipment originally designed for non-flammable substances, it would do so assuming all associated responsibilities and risks and only in accordance with the relevant standards and protocols;

- (h) Requesting UNIDO when submitting the second tranche:
 - (i) To review with the Government of Cameroon the implementation plan for end-user incentive programme of stage II of the HPMP including co-financing from the identified beneficiaries, with a view to considering activities based on more detailed end-users assessment and provide a detailed action plan;
 - (ii) To report on the status of implementation of the ban mentioned in sub-paragraph (c); and
 - (iii) To report on steps taken to strengthen monitoring and reporting of import of HCFCs in line with decision 63/17.

Annex I

DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF THE REPUBLIC OF CAMEROON 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 the Republic of Cameroon (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 22.20 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 the Substance that exceeds the level defined in row 4.1.3, (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) The Country agrees, in cases where HFC technologies have been chosen as an alternative to HCFCs, and taking into account national circumstances related to health and safety: to monitor the availability of substitutes and alternatives that further minimize impacts on the climate; to consider, in the review of regulations standards and incentives adequate

provisions that encourage introduction of such alternatives; and to consider the potential for adoption of cost-effective alternatives that minimize the climate impact in the implementation of the HPMP, as appropriate, and inform the Executive Committee on the progress accordingly in tranche implementation reports; and

- (d) 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 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; and
- (b) The Country and relevant bilateral and/or implementing agencies would take into consideration relevant decisions on the refrigeration 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. UNIDO has agreed to be the lead implementing agency (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 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 role of the Lead IA is contained in Appendix 6-A. The Executive Committee agrees, in principle, to provide the Lead IA with the fees set out in row 2.2 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 kg 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 non-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 and the Lead IA to facilitate implementation of this Agreement. In particular, it will provide the Lead 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	66.76
HCFC-141b	C	I	10.80
Total	C	I	77.56

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2018	2019	2020	2021	2022	2023	2024	2025	Total	
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	79.92	79.92	57.72	57.72	57.72	57.72	57.72	28.86	n/a	
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	38.08	35.4	32.7	30.1	27.5	24.8	22.2	22.20	n/a	
2.1	Lead IA (UNIDO) agreed funding (US \$)	517,750	0	0	786,750	0	0	0	79,000	1,383,500	
2.2	Support costs for Lead IA (US \$)	36,243	0	0	55,073	0	0	0	5,530	96,846	
3.1	Total agreed funding (US \$)	517,750	0	0	786,750	0	0	0	79,000	1,383,500	
3.2	Total support costs (US \$)	36,243	0	0	55,073	0	0	0	5,530	96,846	
3.3	Total agreed costs (US \$)	553,993	0	0	841,823	0	0	0	84,530	1,480,346	
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)										14.53
4.1.2	Phase-out of HCFC-22 to be achieved in the previous stage (ODP tonnes)										28.68
4.1.3	Remaining eligible consumption for HCFC-22(ODP tonnes)										23.55
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)										0
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)										10.80
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)										0

*Date of completion of stage I as per stage I Agreement: 31 December 2018.

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval at the second 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. The National Ozone Unit (NOU) is the focal point covering all monitoring of ODS, imports, consumption, licences and quotas in cooperation with Société de Surveillance Générale (SGS) and the Customs department. Authorization to import HCFCs is granted by the NOU to importers prior to imports taking place. The NOU will also be responsible for the obligatory annual Article 7 data reporting to the Ozone Secretariat and country programme reporting to the Multilateral Fund.

2. Regarding the technical implementation of the feasibility studies, pilot projects and training activities, it is also the NOU that has the overall responsibility for timely and accurate reporting. The proposed Project Management Unit (PMU) operating in close association with the NOU will be responsible for collecting the technical data utilising the proposed new database covering the refrigeration and air-conditioning (RAC) service sector. The 10 regional administrations are expected to support the PMU in all data collection. The activities of the RAC Association, to be extended to all regions, will support this task.

3. The Lead IA will compile the tranche progress reports as well as verification reports supported by independent external experts. These reports will be based on active consultations with the NOU, PMU, RAC Association and other relevant stakeholders.

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;
 - (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) 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, the allocation of the reductions to the different budget items and to the funding of the Lead IA;
 - (k) Ensuring that disbursements made to the Country are based on the use of the indicators;
 - (l) Providing assistance with policy, management and technical support when required; and
 - (m) 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 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 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.
