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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-second Meeting
Montreal, 12-16 May 2014

PROJECT PROPOSAL: GHANA

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

Phase-out

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

UNDP/Italy

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Ghana

(I) PROJECT TITLE	AGENCY
HCFC phase-out plan (stage I)	UNDP (lead), Italy

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2012	27.2 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2012	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					23.9				23.9
HCFC-142b					3.3				3.3

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:		57.3	Starting point for sustained aggregate reductions:
			57.3
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:		20.05	Remaining:
			37.25

(V) BUSINESS PLAN		2012	2013	2014	2015	2016	2017	2018	2019	Total
UNDP	ODS phase-out (ODP tonnes)			3.7	0.0	3.8	0.0	2.4	2.3	12.2
	Funding (US \$)			204,250	0	209,625	0	134,375	130,409	678,659
Italy	ODS phase-out (ODP tonnes)			1.4		1.3		1.2		3.8
	Funding (US \$)			79,100		73,450		67,800		220,350

(VI) PROJECT DATA			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Montreal Protocol consumption limits			n/a	n/a	n/a	57.30	57.30	51.57	51.57	51.57	51.57	51.57	37.25	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	57.30	57.30	51.57	51.57	51.57	51.57	51.57	37.25	
Agreed funding (US \$)	Italy	Project costs	70,000		60,000		70,000		65,000		60,000		0	325,000
		Support costs	9,100		7,800		9,100		8,450		7,800		0	42,250
	UNDP	Project costs	200,000		200,000		190,000		195,000		125,000	121,311	0	1,031,311
		Support costs	15,000		15,000		14,250		14,625		9,375	9,098	0	77,348
Funds approved by ExCom (US \$)	Project costs	270,000	0	260,000	0	0	0	0	0	0	0	0	0	530,000
	Support costs	24,100	0	22,800	0	0	0	0	0	0	0	0	0	46,900
Total funds requested for approval at this meeting (US \$)	Project costs	0	0	0	0	260,000	0	0	0	0	0	0	0	260,000
	Support costs	0	0	0	0	23,350	0	0	0	0	0	0	0	23,350

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Ghana, UNDP, as the lead implementing agency, has submitted to the 72nd meeting of the Executive Committee a request for funding for the third tranche of stage I of the HCFC phase-out management plan (HPMP)¹ at a total cost of US \$283,350, consisting of US \$190,000 plus agency support costs of US \$14,250 for UNDP, and US \$70,000 plus agency support costs of US \$9,100 for the Government of Italy. The submission includes a progress report on the implementation of the second tranche of the HPMP, and annual implementation plans for 2014 to 2016.

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

2. The following activities had been implemented during the second tranche of the HPMP: initiation of the recruitment process of international and national consultants to develop a code of practice and/or standards for the safe use and handling of natural refrigerants by stakeholders; upgrade of existing refrigeration training centre to a centre of excellence (fully air-conditioned and equipped with refrigeration servicing and training equipment and tools procured under the first tranche) and establishment of two training centres during the first and second quarter of 2014; organizing a four-day training workshop for 11 selected refrigeration service centres on safety issues related to hydrocarbons and distribution of retrofit/recovery equipment procured under the first tranche; conversion of 397 HCFC-based split air-conditioners to R-290 refrigerant; preparation and review of information materials and brochures for the sensitization of target groups by the National Ozone Unit (NOU) and the consultant; and activities related to the development of a paperless monitoring system.

3. The National Committee on ODS is the advisory body to the NOU which has been coordinating and managing the implementation of the HPMP. The NOU was assisted by the Government of Italy and supported by national and international consultants for specific activities.

Status of funds disbursed

4. As of February 2014, of the US \$260,000 approved for the second tranche, US \$76,345 (29.4 per cent) had been disbursed. The balance of US \$183,655 (70.6 per cent) is being disbursed in 2014. It will be used for the establishment of the regulatory environment (completion of international and national consultancy assignments and national workshop); the establishment of two training centres (provision of identifiers, training of customs and on hydrocarbon safety issues); continuation of initiated refrigerant recovery/retrofit project activities; the printing of information documents, and monitoring.

Annual plans for the third tranche of the HPMP

5. The main activities to be implemented during the third tranche, including those initiated under the first and second tranches, will focus on:

- (a) Establishment of a regulatory environment and sensitization of the target groups (no funds allocated under the third tranche);
- (b) Establishment of the two training centres started under the second tranche and the training and certification of 150 to 200 technicians per year (US \$20,000);
- (c) Training of 600 trainers and technicians from the factories inspectorate, distributors, importers, sales personnel and fire service (US \$14,000);
- (d) Training or retraining of 100 customs officers (train the trainers) (US \$7,820);

¹ The HPMP for Ghana was approved by the Executive Committee at its 61st meeting to reduce HCFC consumption by 35 per cent of the baseline by 1 January 2020.

- (e) Training or retraining of refrigeration technicians (US \$28,000);
- (f) Purchase of reclaiming equipment (US \$44,000);
- (g) Refrigeration and recovery/retrofit activities including three workshops, each for 100 technicians (US \$9,745);
- (h) Subcontracts with training centres (each centre will have a performance-based contract which will provide an incentive towards its operational costs) (US \$60,000);
- (i) Implementation of the end-user incentive programme workshop for 100 decision-makers from the management of user companies (US \$7,514) and incentives (US \$9,343); and
- (j) Monitoring and technical support (paperless, international and national consultants, local travel) (US \$59,578).

SECRETARIAT’S COMMENTS AND RECOMMENDATION

COMMENTS

HCFC licensing and quota system

6. In line with decision 63/17, confirmation has been received from the Government of Ghana that an enforceable national system of licensing and quotas for HCFC imports is in place and that the system is capable of ensuring compliance with the Montreal Protocol phase-out schedule.

7. The sub-committee established by the National ODS Steering Committee, in collaboration with the NOU, allocates the quotas to importers. During the importation process of HCFCs, the NOU is in charge of verifying the eligibility of the importers and the cumulative imports against the yearly approved quota. The HCFC import quota for 2014 is 30.8 ODP tonnes.

HCFC consumption

8. The HCFC baseline for compliance has been established at 57.3 ODP tonnes. In 2013, Ghana imported 25.4 ODP tonnes which is already a reduction of 44.3 per cent of the consumption baseline and below the maximum allowed consumption of 37.25 ODP tonnes in 2020.

Table 1: HCFC consumption in Ghana (2009 – 2012 Article 7; 2013 estimated)

Year	HCFC consumption (ODP tonnes)			HCFC consumption (metric tonnes)		
	HCFC-22	HCFC-142b*	Total	HCFC-22	HCFC-142b*	Total
2009	52.9	24.4	77.3	961.9	375.7	1,337.6
2010	32.3	4.8	37.1	587.9	74.4	662.3
2011	24.8	5.9	30.7	451.7	90.3	542.0
2012	23.9	3.3	27.2	433.8	51.3	485.1
2013**	23.0	2.4	25.4	418.3	36.7	455.0

* Contained in the blend R-406A (55 per cent of HCFC-22, 41 percent of HCFC-142b and 4 per cent of R-600a).

** Estimated

9. While the Government’s commitment to phase out HCFCs and the activities already implemented may explain the sharp reduction since 2010, the other factors that have contributed to HCFCs reduction include the ban of used refrigerators and freezers importation into the country; the high volume of HCFCs imported in 2009 which resulted in a buffer stock for subsequent years and the shift from the use of HCFC-22-based equipment to ozone-friendly alternatives.

Technical issues

10. The Secretariat assessed the country's strategy for refrigerant recovery and equipment retrofit to hydrocarbon and expressed its concern about the safety use of hydrocarbon in retrofitted equipment and liabilities. In response, UNDP explained that the conversion programme of air-conditioning units to the use of R-290 can be considered safe since a detailed and comprehensive certification system has been put in place to serve as a framework for the retrofits and conversions. Technicians have a strong technical base and awareness in the use of hydrocarbons as a refrigerant because many domestic refrigerators are now working on HC (R-600a) either through conversion of CFC-based refrigerators or the import of new refrigerators. Under the HPMP, experienced refrigeration engineers and technicians were trained in European standards for using hydrocarbons in air-conditioning units. Moreover, 11 conversion centres were selected based on their capacity to appropriately handle the conversions, and a training workshop was organized for owners and technicians of the selected centres which were later equipped with the necessary retrofitting equipment to ensure operational safety. Only these 11 centres are permitted to execute the conversion of air-conditioning split units to R-290. The NOU and its team monitor these centres on a regular basis which have signed a performance contract with the Environmental Protection Agency (EPA) in order to keep their accreditation. The international safety standards for a safe hydrocarbon conversion are being followed and a labelling system is developed to signal that R-290 is being used in the air-conditioning system.

11. Furthermore, UNDP advised that a procedure was put in place to prevent accidents from converting equipment to hydrocarbon. It stipulates that:

- (a) No conversion is allowed outside of the selected centres which have been provided the requisite equipment and tools;
- (b) The owners of the centres are strictly prohibited from employing any technician who has not been trained and certified in the servicing of air-conditioners with hydrocarbon refrigerants;
- (c) The user is informed of the characteristics of the conversion of the equipment, including energy savings and more importantly the safety character of converting to a flammable refrigerant, and what precautions have to be followed as a user. They are also informed that only accredited technicians should service an air-conditioning unit converted to R-290;
- (d) The end user is given the option whether or not to convert the equipment after receiving this information; and
- (e) The liability in case of accident lies with the user.

12. A full legislative and regulatory review is on course and will be completed by 2014. In order to ensure stable and sustainable provision of refrigerant-grade R-290, the Government of Ghana is in consultation with the Government of Nigeria so that imports from the "Pamaque" project to provide refrigerant grade hydrocarbon under the Nigeria HPMP could be organised.

Conclusion

13. Ghana's HPMP is progressing well. An enforceable system of licensing and quotas for HCFC imports is in place and the system is capable of ensuring compliance with the Montreal Protocol. In 2013, Ghana's HCFC consumption had been reduced to a level lower than the 2020 reduction target. Several activities related to the safe use of hydrocarbon, including training and equipment procurement and distribution, had been implemented. Moreover, a certification and a quality control system have been put

in place. According to UNDP, safety standards are being followed and the responsibilities and liabilities have been established. It is expected that the partnership being developed with the Government of Nigeria for the import of hydrocarbons into the country will enable the country to fill the domestic needs for hydrocarbon-based refrigerant.

RECOMMENDATION

14. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the second tranche of stage I of the HCFC phase-out management plan (HPMP) for Ghana.

15. The Fund Secretariat further recommends blanket approval of the third tranche of stage I of the HPMP for Ghana, and the corresponding 2014-2016 tranche implementation plans, with associated support costs at the funding levels shown in the table below, on the understanding that the regulatory environment for the safe use of hydrocarbon refrigerants would be established prior to the submission of the fourth tranche request to the Executive Committee.

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, third tranche)	190,000	14,250	UNDP
(b)	HCFC phase-out management plan (stage I, third tranche)	70,000	9,100	Italy
