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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-sixth Meeting
Montreal, 9-13 May 2016

PROJECT PROPOSAL: GHANA

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) UNDP/Italy

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Ghana

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (Stage I)	UNDP (lead), Italy	61 st	35% by 2020

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2014	23.3 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2014	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123									
HCFC-124									
HCFC-141b									
HCFC-142b					2.18				2.18
HCFC-22					21.16				21.16

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	57.30	Starting point for sustained aggregate reductions:	57.30
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	26.27	Remaining:	31.03

(V) BUSINESS PLAN		2016	2017	2018	2019	Total
UNDP	ODS phase-out (ODP tonnes)	3.8	0	2.4	2.3	8.5
	Funding (US \$)	209,625	0	134,375	130,409	474,409
Italy	ODS phase-out (ODP tonnes)	1.3	0	1.2	0	2.5
	Funding (US \$)	73,450	0	67,800	0	141,250

(VI) PROJECT DATA			2010	2012	2014	2015	2016	2017	2018	2019	2020	Total	
Montreal Protocol consumption limits			n/a	n/a	57.3	51.6	51.6	51.6	51.6	51.6	32.2	n/a	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	57.3	51.6	51.6	51.6	51.6	51.6	32.2	n/a	
Agreed funding (US\$)	UNDP	Project costs	200,000	200,000	190,000	0	195,000	0	0	121,311	0	1,031,311	
		Support costs	15,000	15,000	14,250	0	14,625	0	0	9,098	0	77,348	
	Italy	Project costs	70,000	60,000	70,000	0	65,000	0	0	0	0	0	325,000
		Support costs	9,100	7,800	9,100	0	8,450	0	0	0	0	0	42,250
Funds approved by ExCom (US\$)	Project costs	270,000	260,000	260,000	0	0	0	0	0	0	0	790,000	
	Support costs	24,100	22,800	23,350	0	0	0	0	0	0	0	70,250	
Total funds requested for approval at this meeting (US\$)	Project costs	0	0	0	0	260,000	0	0	0	0	0	260,000	
	Support costs	0	0	0	0	23,075	0	0	0	0	0	23,075	

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 76th meeting 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 \$283,075, consisting of US \$195,000, plus agency support costs of US \$14,625 for UNDP, and US \$65,000, plus agency support costs of US \$8,450 for the Government of Italy. The submission includes a progress report on the implementation of the third tranche and the tranche implementation plan for 2016 to 2018.

Report on HCFC consumption

HCFC consumption

2. The Government of Ghana reported a consumption of 23.34 ODP tonnes of HCFC in 2014 and estimated a consumption of 23.34 ODP tonnes for 2015, as shown in Table 1.

Table 1. HCFC consumption in Ghana (2011-2014 Article 7, 2015 estimate)

HCFC	2011	2012	2013	2014	2015	Baseline
Metric tonnes						
HCFC-22	451.7	433.75	418.29	384.70	384.70	774.90
HCFC-142b*	90.3	51.25	36.72	33.58	33.58	225.05
Total (mt)	542.0	485.00	455.01	418.28	418.28	999.95
ODP tonnes						
HCFC-22	24.8	23.86	23.00	21.16	21.16	42.62
HCFC-142b*	5.9	3.33	2.39	2.18	2.18	14.63
Total (ODP tonnes)	30.7	27.19	25.39	23.34	23.34	57.30

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

3. The HCFC consumption level for 2015 is approximately 54 per cent below the Montreal Protocol targets for that year. The country uses HCFC solely for servicing refrigeration and air-conditioning equipment.

Country programme (CP) implementation report

4. The Government of Ghana reported HCFC sector consumption data under the 2014 CP implementation report that is consistent with the data reported under Article 7. The 2015 CP report is scheduled to be submitted by 1 May 2016.

Implementation of the third tranche of the HPMP

Refrigeration servicing sector

5. The main activities implemented include:

- (a) Training of 28 air-conditioning installation and servicing technicians on the use and handling of HC-290 refrigerant¹
- (b) Training of 30 refrigeration technicians and students of the Ghana Military Academy and Accra Polytechnic on the use of hydrocarbon refrigerants;

¹ Portable refrigerant recovery units, refrigerant recovery and recycling units, recovery cylinders, electronic leak detectors, portable digital weighing set scale, hydrocarbon charging station, two-stage vacuum pumps, set of refrigeration hand tools, swaging tool, thermometers, line testers, set of spanners, hammers, bending tools and tube cutters, R-290 mini split air conditioners for training purposes, etc.

- (c) Training of 33 owners/supervisors and technicians from nine RAC installation and servicing companies on recovery of refrigerants. As of December 2015, approximately 11 tonnes of HCFC-22 have been recovered from 4,531 air-conditioning units; and
- (d) Implementation of the end-user incentive programme workshop for 100 decision-makers from the management of user companies.

Project implementation and monitoring unit (PMU)

6. The National Committee on ODS is the advisory body to the National ozone unit (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. Also, UNDP and two consultants supported the NOU in conducting an inventory of HFCs available in Ghana and producing a report.

Level of fund disbursement

7. As of March 2016, of the US \$790,000 approved so far, US \$520,045 had been disbursed (US \$428,088 for UNDP and US \$91,957 for the Government of Italy). The balance of US \$269,955 will be disbursed in 2016, as shown in Table 2.

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

Agency	First tranche		Second tranche		Third tranche		Total approved	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
UNDP	200,000	200,000	200,000	130,000	190,000	98,088	590,000	428,088
Italy*	70,000	70,000	60,000	18,411	70,000	3,546	200,000	91,957
Total	270,000	270,000	260,000	148,411	260,000	101,634	790,000	520,045
Disbursement rate (%)	100		57		39		66	

*The latest annual progress report (2014) already indicated a disbursement of US \$58,673 for Italy for the second tranche but UNDP, on behalf of the Government of Italy, confirmed that the amount effectively disbursed under the second tranche is US \$18,411. UNDP indicated that the annual progress report will be updated accordingly.

Implementation plan for the fourth tranche of the HPMP

8. The following activities will be implemented:
- (a) Review of the legal framework for the management of HCFCs and the organization of a consultative workshop on legislation (no funds allocated under the fourth tranche) (Italy);
 - (b) Training of at least 25 trainers and at least 50 customs officers on the control and identification of HCFCs and HCFC-based equipment; and a refresher training for at least 20 customs trainers on new developments in the international trade of HCFCs, HFCs and other alternatives to HCFCs (Italy) (US \$15,028);
 - (c) Establishment of two training centres after the signing of the Memorandum of Understanding between the Environmental Protection Agency (EPA) and the principals of host technical institutions; the delivery and installation of the equipment and the recruitment and training of centre coordinators (UNDP) (US \$18,785);
 - (d) Training of the factories inspectorate, national fire service officials, distributors, importers, and sales personnel on safe handling of hydrocarbons (UNDP) (US \$7,514);
 - (e) Collaboration with the Council for Technical and Vocational Education and Training (COTVET) in the establishment of a RAC technician certification scheme and the

training of 400 air-conditioning installation and servicing technicians; and retraining of 800-1000 technicians in HC-600a refrigeration for certification by COTVET. A formal certification scheme for servicing technicians to work with hydrocarbon refrigerants and other natural refrigerants will be implemented (Italy) (US \$39,828);

- (f) Continuation of the implementation of the refrigerant recovery and retrofit project at 11 centres, and monitoring the procurement and delivery of additional equipment² (UNDP) (US \$63,119);
- (g) Implementation of the end-user incentive programme for the retrofit of residential and commercial RAC equipment and the industrial refrigeration sector conversion to hydrocarbons initiated under the third tranche (UNDP) (US \$58,148); and
- (h) Monitoring and technical support (Italy) (US \$10,144) and (UNDP) (US \$47,434).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Verification report

9. At the 72nd meeting, UNDP received funding for the verification of HCFC consumption for 2013 to 2015 in Ghana. At the time of issuance of this document, preparation of the verification report was still underway. Therefore, in line with decision 72/19, funds approved under the third tranche will not be transferred until the Secretariat has reviewed the verification report and confirmed that the Government is in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee.

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

Legal framework

10. The Government of Ghana has already issued HCFC import quotas for 2016 at 28 ODP tonnes.

Refrigeration servicing sector

11. Overall, the HPMP is progressing with some delays in the implementation of the training activities and the procurement of the reclamation unit and other equipment items. Due to the challenges in identifying suppliers that are capable of delivering the required equipment. It is expected that the equipment will be delivered by mid-June 2016. As a result, the training centres could not be operational and the training programme for customs officers, technicians and students could not be implemented as originally planned. Nevertheless, training activities have been organized for nine recovery and recycling centres. Regarding the end-user incentive programme, due to limited resources available under the third tranche, the local newspapers were used to reach participants with the view of organizing technical sessions for a limited number of companies until the funding from the fourth tranche is released. All the activities programmed under the third tranche are planned to be completed by the end of the third quarter of 2016.

² (including portable refrigerant identifier, stage vacuum pumps, portable recovery units, recovery and recycling unit, portable hydrocarbon charging station, portable oxy-acetylene soldering and brazing station, soldering, brazing and held portable torch, piercing valves, digital weighing scale, electronic portable detector, malfunction clamp, precision digital thermometer, and compressors for hydrocarbon gas)

12. At the 72nd meeting the issues related to the retrofitting of equipment to hydrocarbon in Ghana were extensively discussed and the third tranche request was approved noting that the Government agreed with the relevant decision of the Executive Committee on retrofits³. UNDP reported to the same meeting that the technicians have a strong technical base on awareness on the use of hydrocarbons as a refrigerant because many domestic refrigerators are now working on hydrocarbons (R-600a), either through conversion of CFC-based refrigerators or the import of new refrigerators. Only 11 centres which have signed a performance contract with the EPA are permitted to execute the conversion of air-conditioning split units to R-290 and are monitored by the NOU. Although the country reported that international safety standards for safe hydrocarbon conversion were being followed and a labelling system was developed to signal that R-290 is being used in the air-conditioning system, the Government of Italy is supporting the country in the preparation of the consultative workshop on legislation. A report that could be used to formulate the standards and codes of practice will be discussed by stakeholders by the end of April 2016 and will enable the country to finalize the regulatory framework for the safe use of hydrocarbon refrigerants as required in decision 72/32(b)⁴.

13. With regard to the long-term sustainability of the activities, the training programme is being supported by the Centre of Excellence for RAC technology; two technical training institutes are being contracted for the establishment of two regional training centres; and COTVET is assisting in the establishment of a RAC technician certification scheme. A large number of customs officials, technicians and students will be trained through these institutions which will be reinforced under the HPMP to ensure the sustainability of the training activities.

Conclusion

14. The country is in compliance with the Montreal protocol control targets. The verification report is planned to be submitted by 31 July 2016. The HPMP is progressing with some delays in the implementation of the activities planned under the third tranche. Several activities related to the safe use of hydrocarbons, including training and equipment procurement and distribution, were implemented and a certification system on HCFC-based servicing equipment has been put in place. All necessary actions have been taken towards the adoption of regulations and standards on the safe handling and use of R-290 refrigerant, but their finalization is pending the discussions by stakeholders on standards and codes of practice, which will take place by the end of April 2016. The activities implemented to date and those planned under the fourth tranche, including the establishment of the regulatory framework and training centres, training and certification of RAC technicians, technical assistance to training centres and awareness-raising activities, will further strengthen the servicing sector and ensure the long term sustainability of the phase-out activities.

RECOMMENDATION

15. The Fund Secretariat recommends that the Executive Committee take note of the progress report on the implementation of the third tranche of stage I of the HCFC phase-out management plan of (HPMP) for Ghana; and further recommends blanket approval of the fourth tranche of stage I of the HPMP for Ghana, and the corresponding 2016-2018 tranche implementation plan, at the funding levels shown in the table below, on the understanding that the approved funds will not be transferred to UNDP and the Government of Italy until the Secretariat has reviewed the verification report and confirmed that the Government of Ghana is in compliance with the Montreal Protocol and the Agreement between the Government and the Executive Committee:

³ Decision 72/17

⁴ On the understanding that Ghana assumed all responsibilities and risks associated with retrofitting HCFC-based refrigeration and air-conditioning equipment to flammable or toxic refrigerants and associated servicing, and 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, fourth tranche)	195,000	14,625	UNDP
(b)	HCFC phase-out management plan (stage I, fourth tranche)	65,000	8,450	Italy
