UNITED NATIONS

EP

United Nations Environment Programme

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/71/44
7 November 2013

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-first Meeting
Montreal, 2-6 December 2013

PROJECT PROPOSAL: NIGERIA

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 and UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Nigeria

(I) PROJECT TITLE	AGENCY
HCFC phase out plan (Stage I)	UNDP (lead), UNIDO

(II) LATEST ARTICLE 7 DATA (Annex C Group l)	Year: 2012	512.56 (ODP tonnes)

(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-123									
HCFC-124									
HCFC-141b		55.09		129.77					184.86
HCFC-142b									
HCFC-22				71.11	256.59				327.70

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	398.2	Starting point for sustained aggregate reductions:	398.2
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	90.2	Remaining:	308.0

(V) BUSINESS PLAN		2013	2014	Total
UNIDO	ODS phase-out (ODP tonnes)	11.77	3.54	15.31
	Funding (US $)	693,560	208,451	902,011
UNDP	ODS phase-out (ODP tonnes)	18.38	5.47	23.85
	Funding (US $)	1,083,232	322,472	1,405,704

(VI) PROJECT DATA			2010	2011	2012	2013	2014	2015	Total
Montreal Protocol consumption limits			n/a	n/a	n/a	398.2	398.2	358.4	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	398.2	398.2	358.4	n/a
Agreed funding (US $)	UNDP	Project costs	855,603	836,515	503,829	503,829	299,974	0	2,999,750
		Support costs	64,170	62,739	37,787	37,787	22,498	0	224,981
	UNIDO	Project costs	550,000	550,000	645,172	0	193,908	0	1,939,080
		Support costs	41,250	41,250	48,388	0	14,543	0	145,431
Funds approved by ExCom (US $)		Project costs	1,405,603	1,386,515*	0	0	0	0	2,792,118
		Support costs	105,420	103,989*	0	0	0	0	209,409
Total funds requested for approval at this meeting (US $)		Project costs	0	0	1,149,001**	0	0	0	1,149,001
		Support costs	0	0	86,175**	0	0	0	86,175

*Planned for 2011 but approved at the 66th meeting.
**Planned for 2012 but only submitted to the 71st meeting.

Secretariat's recommendation:	For blanket approval

PROJECT DESCRIPTION

1. On behalf of the Government of Nigeria, UNDP as the lead implementing agency, has submitted to the 71st 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 the amount of US $1,235,176, consisting of US $503,829 plus agency support costs of US $37,787 for UNDP, and US $645,172 plus agency support costs of US $48,388 for UNIDO. The submission includes a progress report on the implementation of the second tranche of the HPMP and tranche implementation plans for 2014. As requested by decision 62/58(f)[2], UNDP submission included a verification report on the HCFC licensing and quota system in Nigeria.

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

2. Activities planned in stage I of the HPMP for Nigeria include: upgrade of two local systems houses for supply of fully formulated systems with methyl formate for refrigeration polyurethane foam applications (UNDP); two group foam projects to phase out the use of HCFC-141b in thermoware and miscellaneous applications (UNDP); sub-sector plan for foam blowing in the commercial refrigeration equipment manufacturing sub-sector (UNIDO); support to a manufacturer of integral skin foam to phase out HCFC-141b used in integral skin foam applications (UNDP); a demonstration project for production of refrigerant grade hydrocarbon and technical assistance to downstream users in the refrigeration servicing sector (UNDP); and activities related to monitoring, coordination and management (UNDP and UNIDO).

Regulations

3. Nigeria's ODS regulation was developed in 1998 under the Hazardous Chemical Tracking and Toxic Wastes Dumping Watch Programme under which an ODS import/export licensing system was established. The regulation was amended in 2010 to incorporate further control measures for CFCs thereafter HCFCs in accordance with decision XIX/6 of the Meeting of the Parties.

Upgrade of system houses to produce methyl formate based pre-blended polyols

4. At the approval of the second tranche, Nigeria requested to change from upgrading two system houses to only one (Vitapur) to produce methyl formate based pre-blended polyol system. The second system house, Komaj, will purchase pre-blended foam from Vitapur as a distributor as its facilities proved to be not suitable to operate as a system house. In March 2012, UNDP's expert team visited the main production site of Vitapur and developed equipment specifications (blenders, blending tank and accessories). The expert team also suggested some alterations to the production process to adapt to methyl formate blowing agent. Following the visit, the procurement process was finalized and equipment arrived in the country in August 2013. Installation of equipment is on-going.

Individual project for automotive integral skin foam

5. A visit to the beneficiary enterprise Automotive Component Industries Ltd by an international consultant confirmed that the enterprise has completed the full conversion of its production process in integral skin foam application to a non-ODS all-water-based foaming system, resulting in the phase-out of 4.93 metric tonnes (mt) (0.54 ODP tonnes) of HCFC-141b. Currently the project completion documents are under preparation.

[1] The HPMP for Nigeria was approved at the 62nd meeting to reduce HCFC consumption by 10 per cent of the baseline by 1 January 2015. The third tranche was originally planned for 2012 but only submitted to the 71st meeting.

[2] To request as a precondition for the submission of the third tranche of the HPMP the existence of a functioning licensing/quota system encompassing HCFCs.

Phase-out of HCFC-141b in refrigeration foam sector

6. Detailed technical specifications and terms of reference were developed for supplying low-pressure foam injection machines (delivery, installation, test runs, training and commissioning included) for 53 enterprises covering approximately 50 per cent of eligible beneficiaries. The international bidding process was completed and low-pressure foam units will be supplied to 30 beneficiaries by early 2014. The conversion of these enterprises will result in a phase-out of 96.35 mt (10.6 ODP tonnes) of HCFC-141b.

7. UNIDO indicated that the funds approved for the commercial refrigeration foam (ice-making machine manufacturing) sub-sector appears to be insufficient to accommodate 109 eligible enterprises included in stage I of the HPMP as the lowest cost of a foaming unit with spare parts (without costs of delivery, installation, training and commissioning) obtained through international bidding is US $25,000, which is above the approved incremental cost of US $15,000.

Demonstration project for production of hydrocarbon refrigerant

8. Progress has been achieved in this component. The construction of a distillation unit including building and infrastructure, installation of a distillation tower, condensing unit and auxiliary facilities has been completed. A laboratory was also set up for product quality control. A full safety audit was conducted as a pre-requisite for the facility to start operation and a safety plan was developed. Currently the facility is in trial and testing phase. It is expected that the plant will be in full production in early 2014.

Project monitoring and evaluation

9. The Project Management Unit (PMU) is operational and has coordinated several missions to Nigeria. A verification of the licensing and quota system was conducted and a verification report was submitted together with the tranche request.

Financial report

10. As of 7 October 2013, disbursement of funding has reached 66 per cent for the first tranche and 27 per cent for the second tranche, as shown in Table 1 below.

Table 1: Funding disbursement status

Tranche	Approved (US $)	Expended (US $)	Disbursement	Obligated (US $)	Balance (US $)
First	1,405,603	930,227	66%	460,000	0
Second	1,386,515	371,143	27%	540,000	490,748

Annual plans for the third tranche of the HPMP

11. The following activities are planned for the third tranche:

(a) Completing the upgrades of the systems house Vitapur (installation of equipment, test and trial) and starting full production of methyl formate-based pre-blended polyols;

(b) Conversion of downstream users to methyl formate based pre-blended polyols (alteration of equipment to adapt to methyl formate, test, trial and commission of production using methyl formate-based pre-blended polyols);

(c) Completion of the trial run of the distillation facility and starting full production of hydrocarbon grade refrigerant; technical assistance to downstream users (mainly commercial refrigeration and air-conditioning equipment) in using hydrocarbon refrigerant, training on best practice and retrofitting to hydrocarbon refrigerant; and

(d) Evaluation of remaining eligible foam enterprises in the refrigeration and air-conditioning (RAC) sector, provision of equipment and technical assistance to these enterprises for conversion to non-HCFC production process.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Operational license system

12. As requested by decision 62/58, the Government of Nigeria has submitted a verification report for HCFC licensing and quota system in Nigeria. The report contains the information on existing legal framework, procedures for application and issuance of HCFC licence and quota and the effectiveness of the licensing system in controlling HCFC import. The verification report confirmed that the revised regulation (2010) endorsed the accelerated phase-out of HCFCs and the existing licensing system included HCFCs. Awareness campaigns were conducted and importers have been informed of the HCFC control measures and procedures for applying HCFC import licence. Importers must present a license with quota in order for the imported HCFCs to be released from the Customs. Based on the established procedures and effective enforcement, the licensing system appears operational.

13. A letter has been provided by the National Ozone Unit to confirm that an enforceable national system of licensing and quotas for HCFC imports and exports is in place and that the system is capable of ensuring compliance with the Montreal Protocol HCFC phase-out schedule. The import quota for 2013 has been issued at the baseline level according to the Montreal Protocol control targets.

Technology issues

14. The Secretariat inquired about the product quality of hydrocarbon refrigerant, safety feature of the process and financial sustainability of production. UNDP advised that the quality of refrigerant is controlled through regular gas chromatograph test of the end product. Although there is no official product standard for hydrocarbon refrigerants for the time being, the product purity is controlled at 99.5 per cent which is widely used as indicated by a literature review. The refrigerant price will be approximately US $3.12/kg to achieve financial sustainability of the production process at the current production scale (200 mt per year). Safety procedures for distillation and bottling process have been developed and reviewed by international consultants. Training for downstream users will focus on safety measures in using hydrocarbon refrigerant.

15. The Secretariat noted that the Agreement between the Executive Committee and the Government of Nigeria as well as the overall implementation plan of the HPMP determined that the conversion of 109 RAC foam enterprises implemented by UNIDO will phase out 34.12 ODP tonnes of HCFC-141b by converting their foaming operations to methyl formate pre-formulated systems at an incremental cost of US $1,759,080. The Secretariat also noted that the incremental cost for a low-pressure foam machine per foam user used to calculate the total cost was US $15,000. The Secretariat further noted that a number of enterprises were using hand-mixing. Based on the above, the Secretariat advised UNIDO that, while providing foaming machines to each enterprise might be one way to implement the project, an alternative approach would be to provide technical assistance and protection equipment (ventilation, protective gears) to those enterprises employing currently only hand mixing. The Secretariat also advised that, should UNIDO not be in a position to cover all of the enterprises, funding should be returned accordingly.

UNIDO has been requested to advise the Secretariat of their intentions, and to provide an updated implementation plan including a budget for the conversion of foam manufacturing in enterprises in the refrigeration sector. After consulting with the Government of Nigeria, UNIDO informed the Secretariat that the project component will cover all the beneficiary enterprises and achieve the phase-out of 310.2 mt (34.12 ODP tonnes) of HCFC-141b as originally planned. It will provide low pressure foam machines to 46 large enterprises (with consumption above 2.2 mt) and to provide to smaller enterprises with technical assistance including training on the use of methyl formate-based formulation, personal protection equipment and incremental operating costs. A detailed implementation plan, including information of enterprises and assistance provided to them, activities to be undertaken, allocation of the funding agreed in principle and their schedule will be submitted to the Secretariat in early 2014.

Conclusion

16. The Secretariat noted that an import licensing and quota system is operational and will enable consumption reductions in line with the Montreal Protocol's phase-out schedule. The upgrade of the systems house and the conversion of foam enterprises in refrigeration sector are progressing well, which will lead to a reduced demand of HCFC-141b for foam manufacturing. The demonstration project is at advanced stage and is expected to produce hydrocarbon refrigerant in early 2014. Training for technicians and downstream users in using hydrocarbon refrigerant, and retrofit of equipment to hydrocarbon has been planned for the third tranche. In view of the results achieved so far and activities planned, the Secretariat recommends blanket approval of the funding for the third tranche.

RECOMMENDATION

17. The Fund Secretariat recommends that the Executive Committee:

(a) Notes the progress report on the implementation of the second tranche of stage I of the HCFC phase-out management plan (HPMP) in Nigeria; and

(b) Requests UNIDO to submit an implementation plan, no later than 15 February 2014, for the conversions of foam manufacturing in enterprises in the refrigeration sector, related to a consumption of 310.2 mt (34.12 ODP tonnes) of HCFC-141b, including information of enterprises covered, allocation of the funding, activities to be undertaken and their schedule.

18. The Secretariat recommends blanket approval of the third tranche of stage I of the HPMP for Nigeria, and the corresponding 2014 tranche implementation plan, with associated support costs at the funding level shown in the table below:

	Project title	Project funding (US $)	Support cost (US $)	Implementing agency
(a)	HCFC phase-out management plan (stage I, third tranche)	503,829	37,787	UNDP
		645,172	48,388	UNIDO

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