



**United Nations  
Environment  
Programme**

Distr.  
GENERAL

UNEP/OzL.Pro/ExCom/75/60  
26 October 2015

ORIGINAL: ENGLISH



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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Seventy-fifth Meeting  
Montreal, 16-20 November 2015

**PROJECT PROPOSAL: NIGERIA**

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, fifth tranche) UNDP and UNIDO

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

## Nigeria

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (Stage I)	UNDP (lead), UNIDO	62nd	10% by 2015

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2014	304.11 (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-22				42.2	152.2				194.4
HCFC-141b		32.7		77.0					109.7
HCFC-141b in imported pre-blended polyol		35.1							35.1

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	344.9	Starting point for sustained aggregate reductions:	344.9
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	90.2	Remaining:	308

(V) BUSINESS PLAN		2015	2016	Total
UNDP	ODS phase-out (ODP tonnes)	5.5	0.0	5.5
	Funding (US \$)	322,472	0	322,472
UNIDO	ODS phase-out (ODP tonnes)	0.0	3.5	3.5
	Funding (US \$)	0	208,451	208,451

(VI) PROJECT DATA			2010	2011	2012	2013	2014	2015*	Total
Montreal Protocol consumption limits			n/a	n/a	n/a	344.90	344.90	310.41	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	344.90	344.90	310.41	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	1,149,001	503,829	0		4,444,948
	Support costs		105,420	103,989	86,175	37,787	0		333,371
Total funds requested for approval at this meeting (US \$)	Project costs		0	0	0	0		493,882	493,882
	Support costs		0	0	0	0		37,041	37,041

\* The fifth and final tranche was originally planned for 2014 but only submitted to the 75<sup>th</sup> meeting.

<b>Secretariat's recommendation:</b>	For blanket approval
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## PROJECT DESCRIPTION

1. On behalf of the Government of Nigeria, UNDP as the lead implementing agency, has submitted to the 75<sup>th</sup> meeting a request for funding for the fifth and final tranche of stage I of the HCFC phase-out management plan (HPMP), at a total cost of US \$530,923, consisting of US \$299,974, plus agency support costs of US \$22,498 for UNDP, and US \$193,908, plus agency support costs of US \$14,543 for UNIDO<sup>1</sup>. The submission includes a progress report on the implementation of the fourth tranche, the verification report on HCFC consumption in 2014 and the tranche implementation plan for 2015 to 2016.

### Report on HCFC consumption

#### *HCFC consumption*

2. The Government of Nigeria reported a consumption of 304.11 ODP tonnes of HCFCs in 2014. The 2010-2014 HCFC consumption is shown in Table 1.

**Table 1. HCFC consumption in Nigeria (2010-2014 Article 7 data)**

HCFC	2010	2011	2012	2013	2014	Baseline
<b>Metric tonnes</b>						
HCFC-22	4,739.22	5,244.83	5,958.20	3,887.91	3,535.12	4,518.77
HCFC-141b	979.2	1,035.07	1,142.75	1,096.59	997.08	875.90
<b>Sub-total (mt)</b>	<b>5,718.42</b>	<b>6,279.90</b>	<b>7,100.95</b>	<b>4,984.50</b>	<b>4,532.20</b>	5,394.67
HCFC-141b in imported pre-blended polyols	527.26	540.38	537.76	350.91	319.06	484.43*
Total (metric tonnes)	6,245.68	6,820.28	7,638.71	5,335.41	4,851.26	5,879.10
<b>ODP tonnes</b>						
HCFC-22	260.66	288.47	327.70	213.84	194.43	248.53
HCFC-141b	107.71	113.86	125.70	120.62	109.68	96.35
<b>Sub-total (ODP tonnes)</b>	<b>368.37</b>	<b>402.32</b>	<b>453.40</b>	<b>334.46</b>	<b>304.11</b>	<b>344.88</b>
HCFC-141b in imported pre-blended polyols	58.00	59.44	59.15	38.60	35.10	53.29*
Total (ODP tonnes)	426.37	461.77	512.56	373.06	339.21	398.17

\*Average consumption of 2009 and 2010

3. The HCFC consumption in 2014 of 304.11 ODP tonnes was 12 per cent below the maximum allowable consumption of 344.9 ODP tonnes in the Agreement between the Government of Nigeria and the Executive Committee. The reduction of HCFC consumption in Nigeria from 2012 to 2014 was mainly due to the implementation of the activities in the HPMP. In addition, the fall of oil price and the political uncertainty prior to the presidential election have impacted the economy of the country and resulted in a lower HCFC consumption.

#### *Verification report*

4. The verification report confirmed that the Government is implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs in 2014 was 304.11 ODP tonnes. The verification concluded that Nigeria was in compliance with the Montreal Protocol control target in 2014.

#### *Country programme (CP) implementation report*

5. The Government of Nigeria reported HCFC sector consumption data under the 2014 CP implementation report which is consistent with the data reported under Article 7.

<sup>1</sup> The fifth and final tranche was originally planned for 2014 but only submitted to the 75<sup>th</sup> meeting.

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

*Legal framework*

6. The licensing and quota system is being enforced. The procedure for the management of licensing and quotas has been established. The quotas were determined by the national ozone unit (NOU) of the Ministry of Environment according to national phase-out target and conveyed to the National Agency for Food and Drugs Administration and Control (NAFDAC) for issuing import permits with quota. The quotas were enforced by the Nigerian Customs Service at the port of entry. Customs data was transferred to the NOU for consolidation and reporting.

7. The existing ODS regulations are being reviewed to include issues related to HFCs, and are expected to be approved by the Minister of Environment and become operational by 2016.

*Upgrade of system houses to produce methyl formate (MF)-based pre-blended polyols (UNDP)*

8. The installation of equipment at the system house Vitapur has been completed. All the subsidiary facilities and laboratories have been established. A certificate of completion (COC) of the conversion of the system house will be issued at the end of October 2015. The conversion of 23 downstream users of the system house has started. A memorandum of agreement (MOA) has been signed for the conversion of manufacturing lines for rigid block, panel and spray foam at Vitapur and the five downstream users, and the conversion is expected to be completed by June 2016.

9. For the 18 downstream users of Komaj<sup>2</sup>, which now became a distributor of the system house Vitapur, a full conversion plan for converting to MF-based pre-blended polyol systems has been developed and validated in May 2015. The conversions of the 18 downstream users are expected to be completed by June 2016.

*Phase-out of HCFC-141b in the refrigeration foam sector (UNIDO)*

10. The equipment for the conversion of manufacture of insulation foam for freezers from HCFC-141b to MF at 30 enterprises has been installed, training and technology transfer was provided. A total of 86.35 metric tonnes (mt) (9.50 ODP tonnes) of HCFC-141b has been phased out. The equipment to replace HCFC-141b with MF blowing agent used by 45 ice-making companies has been delivered to Nigeria and cleared by the Customs. Equipment distribution, installation and training are in progress. The project will result in the phase-out of additional 130.5 mt (14.36 ODP tonnes).

*Demonstration project for the production of hydrocarbon refrigerants (UNDP)*

11. The demonstration facility in Pamaque for the production of hydrocarbons with a minimum purity of 99.5 per cent has been established and ready for production and includes, a gas chromatograph for a quality control testing and a bottling unit. The products include HC-290, HC-600a and HC-600, packaged in 300 gram cans and 3-5 kg refillable cylinders.

12. Training on safe use and handling of hydrocarbons and tools have been provided to technicians. Awareness activities were conducted to publicize the project. The Government of Nigeria and UNDP are assessing the needs for additional training which will be implemented during stage II of the HPMP.

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<sup>2</sup> As reported in the second tranche request, UNDP found Komaj questionable regarding its organizational, technical and financial capability to operate as a full systems house. Therefore Komaj will instead purchase MF-based polyurethane systems from Vitapur and distributes pre-blended polyol to a number of downstream users as a distributor in the market. (UNEP/OzL.Pro/ExCom/66/45)

*Project implementation and monitoring unit (PMU)*

13. Project management and monitoring activities have been conducted to ensure efficient implementation. Regular visits to conversion enterprises were made to monitor the progress and to ensure activities were implemented as planned in the HPMP.

Level of fund disbursement

14. As of September 2015, of the US \$4,444,948 so far approved, US \$3,268,025 had been disbursed (US \$1,765,579 for UNDP and US \$1,502,446 for UNIDO). The balance of US \$280,150 will be disbursed in 2016 (Table 2).

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

Agency	First tranche		Second tranche		Third tranche		Fourth tranche		Total approved	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
UNDP	855,603	855,603	836,515	555,462	503,829	251,035	503,829	103,479	2,699,776	1,765,579
UNIDO	550,000	550,000	550,000	550,000	645,172	402,446	0	0	1,745,172	1,502,446
<b>Total</b>	1,405,603	1,405,603	1,386,515	1,105,462	1,149,001	653,481	503,829	103,479	4,444,948	3,268,025
<b>Disbursement rate (%)</b>	100		79.73		56.87		20.54		73.52	

Implementation plan for the fifth tranche of the HPMP

15. The fifth tranche of the HPMP will be implemented between December 2015 and June 2016, and the following activities will be undertaken:

- (a) Continuing the conversion of 23 foam downstream users to pre-blended MF-based formulations (UNDP) (US \$299,974);
- (b) Providing technical assistance and training to the remaining 34 enterprises manufacturing freezers on the use of MF-based formulations, supplying personal protection equipment and funding the incremental operating cost (UNIDO) (US \$193,908); and
- (c) Distribution and installation of equipment, training and technology transfer to an additional 45 ice-making enterprises (UNIDO) (funding from the third tranche).

**SECRETARIAT'S COMMENTS AND RECOMMENDATION****COMMENTS**Progress report on the implementation of the fourth tranche of the HPMP*Legal framework*

16. The licensing and quota system is being enforced. The HCFC import quota for 2015 was issued at 310.41 ODP tonnes in line with the Montreal Protocol control target.

### *Production of hydrocarbons*

17. The Secretariat noted that the hydrocarbon production facility was in trial production in 2014, yet it is still not in full production. UNDP reported that the facility is ready for full production. However an internal procedure by the Department of Petroleum Resources is requiring a licensing fee of US \$50,000 for the establishment of the facility. Given the nature of the facility and the environment and climate benefit from its operation, UNDP and the Ministry of Environment have requested a waiver of this fee which is under consideration by the Department of Petroleum Resources. In addition, the infrastructure around the facility, was upgraded to allow access of trucks. This has delayed the commercial launch of the plant. Pamaque is discussing with potential partners to prepare a full commercial launch of the production of hydrocarbon refrigerants.

### *Revision of Agreement*

18. The HCFC baseline for compliance has been revised by the Ozone Secretariat to remove HCFC-141b contained in imported pre-blended polyols which had been recorded a consumption in previous years. Accordingly the Secretariat has revised paragraph 1, Appendices 1-A and 2-A of the Agreement between the Government of Nigeria and the Executive Committee to differentiate the HCFC-141b contained in imported pre-blended polyols from HCFC-141b in bulk. Due to the difficulties in estimating the amounts of HCFC-141b in bulk and that contained in the pre-blended polyols that were phased out during stage I, it was agreed that all HCFC-141b reduction in stage I will be reflected as one in rows 4.2.1, 4.2.2 and 4.2.3 of Appendix 2-A of the Agreement. UNDP will clearly define the amount of HCFC-141b contained in pre-blended polyols that has been phased out in stage I when submitting stage II. The relevant paragraph and appendices of the Agreement have been updated and paragraph 16 was updated to indicate that the updated Agreement supersedes that reached at the 66<sup>th</sup> meeting, as shown in Annex I of the present document. The full revised Agreement will be appended to the final report of the 75<sup>th</sup> meeting.

### Conclusion

19. The implementation of the stage I of the HPMP for Nigeria has been progressing. A license and quota system is being enforced; HCFC consumption has been controlled at below the level allowed by the Montreal Protocol. The conversion of a system house to supply MF-based foam formulations has been completed, and downstream users of the system house are being converted. The conversion of 30 foam manufacturing enterprises for the manufacture of freezers and ice-making machines has been completed and 45 is at an advanced stage. The demonstration of hydrocarbon production has been completed and a distillation and bottling facility has been installed and ready to produce refrigerant grade hydrocarbon refrigerants. Training on safe handling of hydrocarbons and awareness activities were also undertaken during stage I and equipment and tools were distributed. In view of the progress made and the disbursement of 21 per cent for the fourth tranche and 74 per cent for the overall HPMP, the Secretariat recommends approval of the fifth tranche.

### **RECOMMENDATION**

20. The Fund Secretariat recommends that the Executive Committee:
- (a) Takes note of the progress report on the implementation of the fourth tranche of stage I of the HCFC phase-out management plan (HPMP) for Nigeria;
  - (b) To note that the Fund Secretariat had updated paragraph 1, Appendices 1-A and 2-A of the Agreement between the Government of Nigeria and the Executive Committee, based on the revised baseline, and also updated paragraph 16 to indicate that the updated Agreement superseded that reached at the 66<sup>th</sup> meeting, as contained in Annex I to the present document; and

- (c) Requests the Government of Nigeria, UNDP and UNIDO to submit:
- (i) The project completion report of stage I of the HPMP to the second meeting of the Executive Committee in 2017; and
  - (ii) A verification report of the country's HCFC consumption in 2015, when submitting stage II of the HPMP for consideration of the Executive Committee.

21. The Fund Secretariat further recommends blanket approval of the fifth and final tranche of stage I of the HPMP for Nigeria, and the corresponding 2015-2016 tranche implementation plan, at the funding levels shown in the table below:

	<b>Project title</b>	<b>Project funding (US \$)</b>	<b>Support cost (US \$)</b>	<b>Implementing agency</b>
(a)	HCFC phase-out management plan (stage I, fifth tranche)	299,974	22,498	UNDP
(b)	HCFC phase-out management plan (stage I, fifth tranche)	193,908	14,543	UNIDO

**Annex I**

**TEXT TO BE INCLUDED IN THE UPDATED AGREEMENT BETWEEN THE  
GOVERNMENT OF NIGERIA AND THE EXECUTIVE COMMITTEE OF THE  
MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF  
HYDROCHLOROFLUOROCARBONS**

(Relevant changes are in bold font for ease of reference)

1. This Agreement represents the understanding of the Government of Nigeria (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 310.41 ODP tonnes by 1 January 2015 in compliance with Montreal Protocol schedules.**

16. The **updated** Agreement supersedes the Agreement reached between the Government of Nigeria and the Executive Committee at the **66<sup>th</sup>** meeting of the Executive Committee.

**APPENDIX 1-A: THE SUBSTANCES**

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	248.5
HCFC-141b	C	I	<b>96.4</b>
<b>Sub-total</b>			<b>344.9</b>
<b>HCFC-141b contained in imported pre-blended polyols</b>	<b>C</b>	<b>I</b>	<b>53.29</b>
Total			398.2

**APPENDIX 2-A: THE TARGETS, AND FUNDING**

Row	Particulars	2010	2011	2012	2013	2014	2015	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	n/a	n/a	n/a	<b>344.90</b>	<b>344.90</b>	<b>310.41</b>	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	n/a	n/a	n/a	<b>344.90</b>	<b>344.90</b>	<b>310.41</b>	n/a
2.1	Lead IA UNDP agreed funding (US \$)	855,603	836,515	503,829	503,829	299,974	0	2,999,750
2.2	Support costs for Lead IA (US \$)	64,170	62,739	37,787	37,787	22,498	0	224,981
2.3	Cooperating IA UNIDO agreed funding (US \$)	550,000	550,000	645,172	0	193,908	0	1,939,080
2.4	Support costs for Cooperating IA (US \$)	41,250	41,250	48,388	0	14,543	0	145,431
3.1	Total agreed funding (US \$)	1,405,603	1,386,515	1,149,001	503,829	493,882	0	4,938,830
3.2	Total support cost (US \$)	105,420	103,989	86,175	37,787	37,041	0	370,412
3.3	Total agreed costs (US \$)	1,511,023	1,490,504	1,235,176	541,616	530,923	0	5,309,242
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this agreement (ODP tonnes)							10.6
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)							0
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)							237.9
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this agreement (ODP tonnes)*							79.5
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)							0
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)*							70.1

\*Including HCFC-141b contained in imported pre-blended polyols