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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-ninth Meeting
Bangkok, 3-7 July 2017

PROGRESS REPORT OF UNDP AS AT 31 DECEMBER 2016

1. This document presents the progress report of UNDP as of 31 December 2016[1].

2. The document presents a summary of progress in implementation of projects for 2016 and cumulative since 1991. It contains a review on the status of implementation of each ongoing[2] project at the country level identifying projects with implementation delays and the potential impact on the phase-out of controlled substances, and projects with outstanding issues for consideration by the Executive Committee. Annex I to the present document presents for each ongoing project with outstanding issues a summary status and a recommendation for consideration by the Executive Committee. The document also includes a recommendation.

Summary of progress in implementation of projects for 2016 and cumulative

3. Implementation of projects and activities by UNDP for 2016 and cumulative since 1991 up to 31 December 2016 is summarized as follows:

(a) **Phase-out:** In 2016, zero ODP tonnes of consumption of HCFCs were phased out and an additional 365.1 ODP tonnes of consumption of HCFCs were approved for phase-out. Since 1991, 66,440 ODP tonnes of consumption of ODS had been phased out, of an expected total of 67,437 ODP tonnes from projects approved (excluding cancelled and transferred projects);

(b) **Disbursements/approvals:** In 2016, US $28.29 million was disbursed and US $27.71 million was planned for disbursement based on the 2015 progress report

[1] The progress report is attached to this document. The data has been included in the Consolidated Progress Report database that is available upon request.

[2] Ongoing projects are all projects that have been approved and were under implementation as of 31 December 2016. Key indicators of progress include: percentage of funds disbursed and percentage of projects that have begun disbursing funds; funding expected to be disbursed by the end of the year as a percentage of the approved funding; the average length of projected delay in implementation; and information provided in the remarks column in the progress report database.

representing a rate of disbursement of 102 per cent of that planned. Cumulatively, US $673.83 million had been disbursed out of the total US $752.02 million approved for disbursement (excluding agency fees). This represents a rate of disbursement of 90 per cent. In 2016, US $42.88 million was approved for implementation;

(c) **Cost-effectiveness (in ODP):** Since 1991, the average cost-effectiveness of investment projects approved leading to a permanent reduction in consumption was US $9.76/kg. The average cost-effectiveness of investment projects per ODP tonne was US $8.22/kg for completed projects and US $73.53/kg for ongoing projects[3];

(d) **Number of projects completed:** In 2016, 25 projects were completed. Since 1991, 2,147 projects of the 2,350 projects approved (excluding closed or transferred projects) were completed. This represents a completion rate of 91 per cent;

(e) **Speed of delivery – investment projects:** Projects that were completed in 2016 were completed on average 30 months after their approval. Since 1991, the average time for completion of investment projects has been 33 months after their approval. First disbursements under these projects occurred, on average, 13 months after they had been approved;

(f) **Speed of delivery – non investment projects:** Projects that were completed in 2016 were completed on average 39 months after their approval. Since 1991, the average time for completion of non-investment projects has been 40 months after their approval. First disbursements under these projects occurred, on average, 13 months after they had been approved;

(g) **Project preparation:** Of the 519 project preparation activities approved by the end of 2016, 483 have been completed. In 2016, nine projects were completed, leaving 36 ongoing;

(h) **Implementation delays:** There were a total of 85 ongoing investment projects under implementation at the end of 2016. These projects, on average, will be completed before approved planned completion dates by three months. However, projects classified as "projects with implementation delays" that are subject to the procedures of project cancellation amount to one project (as multi-year agreements (MYAs) are not subject to those procedures); and

(i) **MYAs**: In 2016, UNDP was implementing one MYA for CTC phase-out, one MYA for accelerated CFC production and 56 MYAs for HCFC phase-out management plans (HPMPs). Since 1991, 126 MYAs have been approved and 68 MYAs have been completed.

4. An analysis of UNDP progress report is contained in Annex II to the present document.

Project implementation progress in 2016

5. The Secretariat reviewed the status of project implementation on a country-by-country basis taking into account implementation delays that have occurred with respect to planned completion dates that had been reported in 2016, the potential impact of these delays on phase-out and the rate of planned disbursements.

[3] The higher value of the cost-effectiveness for ongoing projects is largely due to the lower ODP values of HCFCs but also due to the means of assigning phase-out by agencies.

6. Of the 134 ongoing projects, excluding institutional strengthening (IS) and project preparation, 37 projects have extended planned dates of completion since the 2015 progress report. The Executive Committee may wish to note that UNDP will report to the 80th meeting on one project with implementation delays[4], which was also classified as having implementation delays in 2015 (Annex I to the present document).

7. During the review of the progress report, the Secretariat had several discussions with UNDP, where a number of issues on ongoing projects were satisfactorily resolved. However, issues could not be resolved for a number of projects or tranches of multi-year agreements for the phase-out of CFC and HCFCs; projects for ODS waste disposal; refrigerant management plans; preparation of ODS alternative surveys; and renewal of IS projects, as shown in Annex I to the present document. For each ongoing project, a brief description on the status of implementation and the outstanding issues are presented and a recommendation is proposed for consideration by the Executive Committee.

Recommendations

8. The Executive Committee may wish:

(a) To note:

(i) The progress report of UNDP as at 31 to December 2016 contained in document UNEP/OzL.Pro/ExCom/79/10;

(ii) That UNDP would report to the 80th meeting on one project with implementation delays and on 21 projects recommended for additional status reports, as indicated in Annex I to the present document;

(b) To approve the recommendations on ongoing projects with specific issues listed in the last column of the table contained in Annex I to the present document.

[4] The Executive Committee has defined projects with implementation delays as projects approved over 18 months with disbursement less than one per cent, or projects that are expected to be completed 12 months later than forecast in the last progress report (decision 22/61).

Annex I

ONGOING PROJECTS WITH OUTSTANDING ISSUES IN THE PROGRESS REPORT FOR UNDP

Country	Project title/project code	Disburse-ment rate (%)	Status/Issues	Recommendation
CFC projects				
Pakistan	Plan for phase-out of CFCs in the manufacture of pharmaceutical MDIs (PAK/ARS/56/INV/71)	29	Project with implementation delays (12 months delay).	To request UNDP to report to the 80th meeting on this project with implementation delays.
			Project is technically completed. A regulatory clearance of product is required by the Ministry of Health (many cases are pending verification and approvals since 2012). The project is now planned for completion by June 2017.	To approve the revised completion date of June 2017 as the final date of completion; and to request UNDP to submit a project completion report (PCR) by December 2017 and to return funds balances no later than June 2018.
ODS disposal projects				
Brazil	Pilot demonstration project on ODS waste management and disposal (BRA/DES/72/DEM/305)	11	The consultation process to identify companies for the destruction plant was organized. The project was not completed in January 2017 as planned; thus an extension until December 2019 is requested.	To reiterate decision 77/8(e)(i), to request UNDP to submit to the 80th meeting a detailed report on this project as projects with specific reporting requirements; and to complete the project by December 2017, noting that a completion date of January 2017 had already been assigned by the Committee.
Colombia	Demonstration project on end of life ODS management and destruction (COL/DES/66/DEM/82)	66	The burning test was conducted and collected data was analyzed by the international expert. The planned date of completion was extended from April 2017 to December 2017.	To reiterate decision 77/8(e)(i), to request UNDP to submit to the 80th meeting a detailed report on this project as projects with specific reporting requirements and to complete the project by December 2017.
Refrigerant management plans				
Maldives	Implementation of the RMP: Awareness and incentive programme (MDV/REF/38/TAS/05)	100	The Committee assigned a completion date of January 2016 and requested UNDP to return any remaining balances to the 79th meeting (decision 77/10(b)). UNDP advised that the project is planned for completion in December 2017 noting that no activity was reported in 2016 due to the absence of alternative technology for retrofitting.	To reiterate decision 77/10(b), and to request UNDP to report this project as completed and to return funds balances no later than January 2018.

Country	Project title/project code	Disburse-ment rate (%)	Status/Issues	Recommendation
ODS alternative surveys				
Cuba, Islamic Republic of Iran, Peru			A consultant was hired and, in most cases, the survey is underway.	To request UNDP to submit the surveys on ODS alternatives to the 80th meeting in accordance with decisions 74/53(h) and 78/2(c).
India	Survey of ODS alternatives at the national level (IND/SEV/74/TAS/461)		Project cancellation was requested by the Government.	To approve cancellation of the project, and to request UNDP to return fund balances no later than June 2018.
Renewal of institutional strengthening projects				
Cuba	Phase X: 1/2016-12/2017 (CUB/SEV/75/INS/54)	0	Agreement has not been signed yet.	To request a status report to the 80th meeting to monitor the signing of the Agreement.
Tranches of HCFC phase-out management plans				
Barbados	HCFC phase-out management plan (stage I, first tranche) (BAR/PHA/69/INV/21)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Bangladesh	HCFC phase-out management plan (stage I, first tranche) (refrigeration servicing sector) (BGD/PHA/65/INV/40)	0	Low disbursement rate of approved funds due to late signing of the Agreement	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Brazil	HCFC phase-out management plan (stage I, fourth tranche) (foam sector plan) (BRA/PHA/74/INV/307)	0	Low disbursement rate of approved funds because funds from previous tranches were used.	To request UNDP to provide a detailed report as projects with specific reporting requirements to the 80th meeting to monitor low disbursement rate of approved funds.
Brazil	HCFC phase-out management plan (stage II, first tranche) (foam sector) (BRA/PHA/75/INV/312)	0	Low disbursement rate of approved funds because funds from previous tranches were used.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Brazil	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing, regulatory actions and project monitoring) (BRA/PHA/75/TAS/313)	3	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Brazil	HCFC phase-out management plan (stage I, fifth tranche) (foam sector) (BRA/PHA/75/INV/315)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.

Country	Project title/project code	Disburse-ment rate (%)	Status/Issues	Recommendation
Colombia	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing sector) (COL/PHA/75/INV/96)	1	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Colombia	HCFC phase-out management plan (stage II, first tranche) (project management, monitoring and coordination) (COL/PHA/75/TAS/91)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Colombia	HCFC phase-out management plan (stage II, first tranche) (technical assistance in policies formulation and implementation) (COL/PHA/75/TAS/92)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Colombia	HCFC phase-out management plan (stage II, first tranche) (technical assistance for fire protection sector) (COL/PHA/75/TAS/94)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Guyana	HCFC phase-out management plan (stage II, first tranche) (GUY/PHA/75/INV/28)	7	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Indonesia	HCFC phase-out management plan (project management and coordination) (stage I, second tranche) (IDS/PHA/71/TAS/200)	0	Low disbursement rate of approved funds. Activities under this tranche have been carried out; however, disbursements are reported under the earliest approved tranches.	To reiterate decision 76/47(d), and to request UNDP to submit to the 80th meeting a detailed report on this project as a project with specific reporting requirements.
India	HCFC phase-out management plan (stage I, third tranche) (polyurethane foam sector plan and project monitoring) (IND/PHA/75/INV/464)	0	Low disbursement rate of approved funds; however, the funds will be disbursed by the end of 2017 after re-verification of the beneficiaries.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Lebanon	HCFC phase-out management plan (stage II, first tranche) (air conditioning sector) (LEB/PHA/75/INV/86)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Lebanon	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing sector) (LEB/PHA/75/INV/87)	0	Low disbursement rate of approved funds.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.

Country	Project title/project code	Disburse-ment rate (%)	Status/Issues	Recommendation
Lebanon	HCFC phase-out management plan (stage II, first tranche) (project management and coordination) (LEB/PHA/75/TAS/88)	0	Low disbursement rate of approved funds due to late signing of the Agreement.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Malaysia	HCFC phase-out management plan (stage I, third tranche) (refrigeration servicing, management and coordination) (MAL/PHA/75/TAS/179)	0	Low disbursement rate of approved funds due to understaffing at the UNDP country office.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Nepal	HCFC phase-out management plan (stage I, first tranche) (NEP/PHA/66/INV/30)	19	Low disbursement rate of approved funds due to natural disasters and changes in NOU.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds noting that this project was approved twelve meetings ago.
Nepal	HCFC phase-out management plan (stage I, second tranche) (NEP/PHA/75/INV/35)	0	Low disbursement rate of approved funds because the Agreement was not signed.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds and the signing of the Agreement.
Nigeria	HCFC phase-out management plan (stage I, fifth tranche) (foam sector and refrigeration servicing) (NIR/PHA/75/INV/143)	0	Low disbursement rate of approved funds due to the need to complete a number of activities.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.
Saint Kitts and Nevis	HCFC phase-out management plan (stage I, first tranche) (STK/PHA/64/TAS/16)	0	Low disbursement rate of approved funds and establishment of the list and specifications of the equipment.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds and establishment of the list and specifications of the equipment noting that this project was approved 14 meetings ago.
Trinidad and Tobago	HCFC phase-out management plan (stage I, third tranche) (TRI/PHA/75/INV/33)	0	Low disbursement rate of approved funds due to the use of funds from previous tranches.	To request a status report to the 80th meeting to monitor low disbursement rate of approved funds.

Annex II

ANALYSIS THE PROGRESS REPORT OF UNDP AS AT 31 DECEMBER 2016

1. As of that date, the Executive Committee had approved US $853.61 million consisting of US $752.02 million for investment and non-investment projects and US $101.59 million for agency fees and administrative support costs, as shown in Table 1. In 2016, 54 new projects and activities were approved. This level of funding is expected to result in the phase-out of 67,437 ODP tonnes of ODS consumption.

Table 1: Approved funding by sector for UNDP as at 31 December 2016

Sector	Funding (US $)
Aerosol	26,432,885
Destruction	3,622,896
Fire fighting	50,000
Foam	173,581,768
Halon	4,996,975
Fumigants	20,081,243
Phase-out plan	263,071,815
Process agent	1,286,923
Production	1,056,900
Refrigeration	137,489,662
Several	56,234,942
Solvents	63,699,998
Sterilant	417,628
Sub-total	**752,023,635**
Administrative costs	101,591,175
Total	**853,614,810**

2. A summary of the status of projects implemented by category is presented in Table 2.

Table 2: Status of project implementation by category

Type	Number of projects*			Funding (US $)			
	Approved	Completed	% completed	Approved	Disbursed	Balance	% disbursed
Country programme (CP)	22	22	100	1,628,797	1,628,797	0	100
Demonstration	43	33	77	22,235,153	17,359,939	4,875,214	78
Institutional strengthening (IS)	220	187	85	46,288,799	40,360,038	5,928,761	87
Investment	1,228	1,143	93	616,603,194	558,785,975	57,817,219	91
Project preparation	519	483	93	21,882,309	20,393,786	1,488,522	93
Technical assistance	290	251	87	41,794,894	33,713,310	8,081,584	81
Training	28	28	100	1,590,489	1,590,489	0	100
Total	**2,350**	**2,147**	**91**	**752,023,635**	**673,832,335**	**78,191,300**	**90**

*Excludes closed and transferred projects.

3. Table 3 presents an overview of status of project implementation by year[5]. All projects and activities approved between 1991 and the end of 2001, as well as 2003, 2004, 2006 and 2007, have now been completed.

Table 3: Status of project implementation by year

Year	Number of projects*			Funding (US $)			
	Approved	Completed	% completed	Approved	Disbursed	Balance	% disbursed
1991	15	15	100	1,149,032	1,149,032	0	100
1992	67	67	100	8,619,002	8,619,002	0	100
1993	57	57	100	13,204,712	13,204,712	0	100
1994	148	148	100	49,481,580	49,481,581	-1	100
1995	117	117	100	29,599,445	29,599,446	-1	100
1996	83	83	100	27,838,805	27,838,805	0	100
1997	188	188	100	44,056,257	44,056,257	0	100
1998	172	172	100	31,305,010	31,305,010	0	100
1999	204	204	100	35,896,883	35,896,884	-1	100
2000	149	149	100	31,268,362	31,268,361	1	100
2001	179	179	100	35,292,272	35,292,271	1	100
2002	117	116	99	44,316,424	44,316,422	2	100
2003	64	64	100	36,336,530	36,336,530	0	100
2004	69	69	100	24,802,715	24,802,714	1	100
2005	53	52	98	29,125,659	28,890,910	234,749	99
2006	62	62	100	15,753,458	15,753,461	-3	100
2007	54	54	100	12,142,488	12,142,486	2	100
2008	84	83	99	23,251,912	22,930,356	321,556	99
2009	93	91	98	13,297,299	13,145,705	151,594	99
2010	43	42	98	19,837,236	19,574,703	262,532	99
2011	63	58	92	57,177,158	56,030,418	1,146,740	98
2012	29	24	83	33,933,829	31,193,939	2,739,890	92
2013	43	22	51	34,583,627	30,075,380	4,508,247	87
2014	67	25	37	22,995,687	17,854,573	5,141,114	78
2015	76	6	8	33,879,623	12,973,666	20,905,957	38
2016	54	0	0		99,711	42,778,920	0
Total	**2,350**	**2,147**	**91**	**752,023,635**	**673,832,335**	**78,191,300**	**90**

*Excludes closed and transferred projects.

4. Table 4 presents project implementation by country for 2016.

Table 4. Summary of project implementation by UNDP for 2016

Country	Phased out in 2016	Percentage of planned phase-out achieved in 2016	Estimated funds disbursed in 2016 (US$)	Funds disbursed in 2016 (US$)	Percentage of funds disbursed over estimation in 2016	Percentage of planned projects completed in 2016
Angola	0		123,158	97,846	79	0
Argentina	0		65,315	121,233	186	0
Armenia	0		24,267	7,054	29	0

[5] The data is presented according to the year when a project was approved by the Executive Committee. It treats all approvals (investment and non-investment projects) equally (i.e., an investment project or a funding tranche of an MYA of US $1 million is considered one project, same as a country programme preparation of US $30,000). Key indicators from the annual summary are: the percentage of projects completed, ODP phased out, and percentage of funds disbursed. There are three types of disbursements: during implementation, after implementation and for retroactively-financed projects.

Country	Phased out in 2016	Percentage of planned phase-out achieved in 2016	Estimated funds disbursed in 2016 (US$)	Funds disbursed in 2016 (US$)	Percentage of funds disbursed over estimation in 2016	Percentage of planned projects completed in 2016
Bangladesh	0		183,675	93,466	51	
Barbados	0		20,000	0	0	
Bhutan	0		593	0	0	
Brazil	0	0	5,972,480	3,362,020	56	67
Brunei Darussalam	0		16,282	15,000	92	
Cambodia	0		60,000	150,000	250	
Chile	0		560,214	263,643	47	100
China	0	0	4,308,264	10,057,069	233	0
Colombia	0		1,601,447	775,604	48	100
Costa Rica	0		257,027	228,486	89	67
Cuba	0		372,587	186,917	50	0
Democratic Republic of the Congo (the)	0	0	22,775	35,275	155	0
Dominican Republic (the)	0		164,077	246,503	150	0
Egypt	0		1,310,209	218,981	17	
El Salvador	0		73,666	110,035	149	0
Fiji	0		17,287	13,690	79	0
Georgia	0		84,792	63,376	75	
Ghana	0	0	101,171	215,147	213	75
Global	0		0	0		100
Guyana	0		63,900	10,451	16	
Haiti	0		606	0	0	
India	0		2,941,222	2,200,979	75	0
Indonesia	0		1,777,738	3,596,414	202	0
Iran (Islamic Republic of)	0		245,014	181,534	74	0
Jamaica	0		24,813	78,845	318	
Kuwait	0		20,000	0	0	0
Kyrgyzstan	0		68,078	35,209	52	
Lebanon	0		1,241,180	799,454	64	0
Malaysia	0	0	1,176,726	605,693	51	0
Maldives	0		120,447	103,356	86	0
Mexico	0		2,418,615	2,806,831	116	
Nepal	0		27,040	0	0	0
Nigeria	0		612,235	368,820	60	0
Pakistan	0		213,476	68,836	32	0
Panama	0		220,311	140,833	64	75
Paraguay	0		115,401	78,917	68	0
Peru	0		167,022	137,806	83	0
Republic of Moldova (the)	0		15,949	28,012	176	0
Saint Kitts and Nevis	0		16,000	0	0	
Sri Lanka	0		73,460	146,979	200	0
Timor-Leste	0		24,000	5,000	21	
Trinidad and Tobago	0		327,290	233,805	71	
Uruguay	0	0	213,645	179,158	84	67
Venezuela (Bolivarian Republic of)	0		249,688	221,131	89	100
Grand Total	**0**	**0**	**27,713,142**	**28,289,405**	**102**	**24**

Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol

UNDP Annual Progress and Financial Report Narrative: 1991-2016

79th Meeting, 3 – 7 July 2017, Bangkok, Thailand

I. INTRODUCTION

The following narrative is based on a database of 2444 projects funded by the Multilateral Fund, which contains basic information on their status of implementation as of 31 December 2016. However, some updates of activities which took place during the first quarters of 2016 are also included for information purposes. The database results in 11 summary tables which can be found at the end of this report, and which are referred to throughout this narrative.

As can be seen in the following sections, UNDP has disbursed US$ 673,832,335 of the US$ 752,023,810 worth of projects that were approved under the Multilateral Fund since its inception in 1991. These programmes were supposed to eliminate 68,108 ODP T/year, of which 67,076 (98%) were phased out as of 31 December 2016. This demonstrates UNDP's important role in the success of MLF's assistance towards the elimination of Ozone Depleting Substances.

As of the end of 2016, UNDP was active in 47 countries, of which 24 are low volume consuming (LVCs). The vast majority of ongoing projects are implemented using the National Implementation modality, providing countries with larger country ownership.

A large portion of the current ongoing programmes consist of HCFC phase-out management plans (HPMPs). For these, UNDP is the lead agency in 29 countries. In addition, UNDP also acts as the cooperating agency for 18 countries. In 2016, there were only two remaining HPMPs (Mauritania and South Sudan), which were a part of UNDP's business plan and which have not been submitted yet. However, the Stage I HPMP for South Sudan has been submitted for consideration of the Executive Committee at the 77th meeting and it was approved by the Executive Committee. Stage I HPMP for Mauritania is expected to be submitted for consideration of the Executive Committee at its 80th meeting in the fall of 2017.

There is a surge of workload for UNDP to meet the needs of so many HPMPs that are currently under implementation. This significant workload comes at a time that preparation of Stage II HPMPs is under way. Most countries, for which UNDP is the lead agency, have submitted their requests for Stage II HPMP full proposals in 2015/2016 and five countries (Angola, Bangladesh, Democratic Republic of Congo, Nigeria, and Peru) are expected to submit their requests in 2017 and beyond. Despite this challenging situation, UNDP, with its network of country offices, remains fully committed to meet the increased workload and ensure that countries receive the assistance needed to be in compliance with all requirements of the Montreal Protocol.

UNDP has also been at the forefront of technical assessments and demonstration projects for potentially cost-effective alternatives to HCFCs that minimize environmental impacts, particularly for those specific applications where such alternatives are not presently available and applicable. Pursuant to ExCom decision 72/40, UNDP has submitted seven funding requests for the preparation of projects to demonstrate climate-friendly and energy-efficient alternative technologies to HCFCs, and feasibility studies on district cooling. All these projects were approved in 2015.

Finally, pursuant to the decision of XXVI/9 of the Twenty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, UNDP is also conducting twelve surveys of ODS alternatives, prioritizing the Foams, Refrigeration and Air Conditioning sectors in selected developing countries representing a balance of size and regional spread in order to: establish the market penetration of current commercially available alternatives, in terms of supply chain and costs, performance and environmental impact; and identify emerging alternatives, in terms of their expected market introduction and availability, performance and projected costs. ODS alternative surveys have been approved for Bangladesh,

Costa Rica, Cuba, Dominican Republic, El Salvador, India, Iran, Lebanon, Moldova, Panama, Paraguay, and Peru. UNDP submitted the majority of the surveys and is working towards finalizing them for Cuba, India, Iran, and Peru.

II. PROJECT APPROVALS AND DISBURSEMENTS

A. Annual Summary Data (See table 1)

Table 1: "Annual Summary" shows the important summary data on the number of project approvals, corresponding budgets, ODP, and disbursement figures. The table highlights that, cumulatively, as of 31 December 2016, UNDP had a total of 2444 approved projects under the Multilateral Fund, of which 94 had been canceled or transferred. Of the 2350 remaining projects, 2,144, or 91% have been completed. They are set to eliminate 67,437 ODP T/year, of which 66,440 ODP T (99%) have already been eliminated.

As of 31 December 2016, UNDP had received cumulative net project approvals of US$ 752,023,810 (excluding support costs). Of these, UNDP, as of end-2016, had disbursed US$ 673,832,335 excluding all obligations. This translates to 90% of approved funding. This is about the same as last year's disbursement rate of 91% Furthermore, an additional US$ 862,156 of commitments were outstanding as of end-December 2016, representing orders placed but final payments not yet made.

B. Interest and Adjustments

Interest income earned on MLF resources in 2016 is US$ 659,668. Once the financial statements are submitted to the MLF Treasurer by the agreed deadline of 30 September, the difference between the provisional and final 2016 interest income can be adjusted against UNDP project approvals in 2017.

C. Summary Data By Type and Chemical [CPG, DEM, INS, INV, PRP, TAS, TRA] (See table 2)

Table 2: Summary Data by Project Type presents an overview of the approvals by the type of project. It demonstrates that of the total amounts approved, 82.2% of the budgets were dedicated to investment projects, 5.2% to technical assistance projects, 5.7% to institutional strengthening and 3.5% to project preparation activities. The remaining 3.3% was dedicated to country programmes and demonstration/training activities.

III. PROJECT COMPLETIONS SINCE LAST REPORT

A ODP Phased Out from Completed Investment Projects

A total of 12 investment projects comprising 1 in foams and 11 in phase-out plans were completed between 1 January and 31 December 2016. Completed HPMP tranches phased out 3.8 ODP tonnes.

B. Non-Investment Project Completions Since The Last Report

A total of 10 non-investment projects, comprising 4 institutional strengthening phases, and 6 preparatory activities were completed between 1 Jan and 31 Dec 2016.

IV. GLOBAL AND REGIONAL PROJECT HIGHLIGHTS

A. **Global Projects:** There is one on-going global programme under implementation by UNDP:

GLO/SEV/77/TAS/339, the Core unit support (2017) programme approved at the 77th meeting of the Executive Committee, that covers the administrative costs of UNDP's Montreal Protocol Unit; and continuation of Core Unit support at a level that allows UNDP to provide the oversight, reporting and assistance needed to sustain the large programmer is critical.

B. **Regional Projects:** There are no ongoing regional projects at this time.

V. PERFORMANCE INDICATORS

A. Results in 2016

Decision 41/93 of the Executive Committee approved the following indicators to allow for the evaluation of performance of implementing agencies, with the weightings indicated in the table below. Annex V of the report of the 77th meeting of the Executive Committee contained UNDP's 2016 targets. One can see from the table below that UNDP fully met 4 out of 9 of its targets and that its score amounts to 96.8%.

Category of performance indicator	Item	Weight	UNDP's target for 2016	Result achieved in 2016	Score
1. Approval	Number of tranches approved vs. those planned*	10	29	35 → 100% (see annex 1, 1)	10.0
2. Approval	Number of projects/activities approved vs. those planned (including project preparation activities)**	10	18	19 → 100% (see annex 1, 2)	10.0
3. Implementation	Funds disbursed	15	$26,906,232	$25.1 million → 93% (see annex 1, 3)	14.0
4. Implementation	ODS phase-out for the tranche when the next tranche is approved vs. those planned per business plans	25	390.2	360.7 → 92% (see annex 1, 4)	23.1
5. Implementation	Project completion vs. planned in progress reports for all activities (excluding project preparation)	20	23	24→ 100% (see annex 1, 5)	20.0
6. Administrative	The extent to which projects are financially completed 12 months after project completion	10	70% of those due	55 finrevs out of 57 96% (see annex 1, 6)	9.7
7. Administrative	Timely submission of project completion reports vs. those agreed	5	70% of those due	100% achieved (8 individual PCR submitted out of 8 planned and 1 MYA PCR submitted out of 1 planned -- see annex 1, 7)	5.0
8. Administrative	Timely submission of progress reports and responses unless otherwise agreed	5	On-time	100% achieved (see annex 1, 8)	5.0
TOTAL		100			96.8

*The target of an agency would be reduced if it could not submit a tranche owing to another cooperating or lead agency, if agreed by that agency.
** Project preparation should not be assessed if the Executive Committee has not taken a decision on its funding.

B. Cumulative completed investment projects (Table 4)

As Table 4: Cumulative completed investment projects shows, a total of 1,142 investment projects have been completed, with a corresponding elimination of 61,056 ODP T. Of the US$ 501,569,108 in their approved budgets in the sectors of Foam, Refrigeration, Phase-out Plan, Aerosol, Solvents, Fumigants, Halon, Process

Agents, and Sterilants, 100% has already been disbursed. It took an average of 13 months from approval to first disbursement and 33 months from approval to completion. The overall cost-effectiveness of the projects to the Fund was $8.21 /kg. A breakdown of this group of projects is given by region, sector, implementation modality, etc.

C. Cumulative completed non-investment projects (Table 5)

As Table 5 shows, UNDP has completed 519 non-investment projects excluding project preparation assistance. Of the US$ 88,564,664 in their approved budgets, 100% has been disbursed. It took an average of 13 months from approval to first disbursement and 40 months from approval to completion. A breakdown of this group of projects is given by region, type, sector, implementation modality, etc.

D. Cumulative ongoing investment projects (Table 6)

As can be seen in Table 6, UNDP has 86 ongoing investment projects in the sectors of Phase-out Plans, Foam Aerosol, and Fumigants with corresponding budgets of US$ 108,493,219. Of this amount, 47% has already been disbursed. It takes an average of 11 months from approval to first disbursement and an average of 32 months from approval to the estimated project completion. The overall cost-effectiveness of the projects to the Fund was $73.66 /kg. A breakdown of this group of projects is given by region, sector, implementation modality, etc.

E. Cumulative ongoing non-investment projects (Table 7)

Table 7 shows that UNDP has 84 ongoing non-investment projects excluding project preparation assistance. Of the US$ 24,501,708 in approved budgets, 22% has been disbursed. It takes an average of 12 months from approval to first disbursement and 28 months from approval to the estimated project completion. A breakdown of this group of projects is given by region, type, sector, implementation modality, etc.

VI. STATUS OF AGREEMENTS AND PROJECT PREPARATION BY COUNTRY

A. Agreements To Be Signed/Executed/Finalized

Since UNDP has a standard legal agreement in place in each developing country that covers UNDP activities in that country, no additional legal agreement is required. There were no specific issues related to this in 2016.

B. Project Preparation By Country, Approved Amount And Amount Disbursed (Table 8)

Table 8: Project Preparation by Country, Approved Amount and Amount Disbursed, indicates active project preparation accounts. Of the ongoing 36 PRP projects listed with US$ 2,497,000 in associated approvals, 51% has been disbursed.

VII. DESCRIPTION OF KEY ONGOING ACTIVITIES

This section contains a narrative description of the following key ongoing activities:

A. Technology demonstration projects
B. ODS destruction demonstration projects
C. Country Highlights

A. **Technology demonstration projects**

UNDP has been at the forefront of developing and implementing demonstration projects in various regions and sectors to assess relatively new technological developments for which little or no experience or data exists on technical performance and costs since 1996. The major objectives of such types of demonstrations were to find alternative solutions and cost-saving methods to the Multilateral Fund for the Implementation of the Montreal Protocol in order to carry out HCFC-investment activities in the future years, bearing in mind the impact on the climate. The results of the demonstrations of emerging technologies in various industrial processes under local conditions in the following countries are described below:

A1. Demonstrations related to Stage I HPMPs

Brazil and Mexico

Pilot projects for the assessment of alternative technologies in PU Foam Applications were approved in Brazil and Mexico to develop, optimize and assess the use of methyl formate and methylal as blowing agents in PU applications. As a result of the demonstration projects, methyl formate was selected as an alternative technology in Egypt, Mexico, Nigeria, Brazil, Jamaica, Trinidad and Tobago, Cameroon, and some other countries. System houses in both Mexico and Brazil have adopted methylal technology in their HPMPs as a result of the successful pilot project.

China

Foam Sector

The Executive Committee approved a demonstration project to convert HCFC-22/HCFC-142b technology to CO_2 with methyl formate co-blowing technology in the manufacture of extruded polystyrene foam at Feininger (Nanjing) Energy Saving Technology Co. Ltd. It can be concluded that the CO2 and methyl formate formulation tested can be applied to XPS manufacturing given that thermal conductivity, compression strength and limited oxygen index are acceptable. It was also determined that using methyl formate as the co-blowing agent of CO2 had no significant influence on the processing process of XPS board.

Refrigeration and Air Conditioning

- Demonstration project for conversion from HCFC-22 to HFC-32 in the manufacture of commercial air-source chillers/heat pumps at Tsinghua Tong Fang Artificial Environment Co. Ltd.: The project is the first in China to adopt HFC-32 in place of HCFC-22 in the production of small-sized commercial air-source chillers/heat pumps. The demonstration project has directly led to the use of HFC-32 as a major alternative to HCFC-22 in the industrial and commercial refrigeration sector plan of stage I of the HPMP for China. Further conversion activities to HFC-32 technology have been approved for the HPMP in Indonesia, Algeria and Thailand.

- Demonstration project for conversion from HCFC-22 technology to ammonia/CO_2 technology in the manufacture of two-stage refrigeration systems for cold storage and freezing applications at Yantai Moon Group Co. Ltd: The capacity of the production line has been converted to use substitute refrigerants and is capable of manufacture the converted products. The project has passed the national acceptance verification. The converted products have been put into use by users in Yantai, Weihai and Dalian. The market has expressed interest. The technology route is innovative, the resulting product has significant advantages in terms of environment friendliness and energy efficiency, and the safety performance is greatly improved.

Solvents

The Executive Committee approved a demonstration project for conversion from HCFC-141b based technology to iso-paraffin and siloxane (KC-6) technology for cleaning in the manufacture of medical devices at Zhejiang Kindly Medical Devices Co. Ltd. The project carried out an assessment of more than 15 solvents widely used in the medical devices sector globally. The project tested the use of KC-6 as an alternative to HCFC-141b. With necessary equipment modifications for needle assembly lines and silicification tooling cleaning line KC-3 presents itself as a viable alternative to HCFC-141b for cleaning in the manufacture of medical devices.

Colombia

The Executive Committee approved the assessment project for supercritical CO2 technology in the manufacture of sprayed polyurethane rigid foams in Colombia. The project was designed to evaluate in developing countries the performance of super-critical CO2, a relatively new technology currently used in Japan for polyurethane (PU) spray rigid foam. Results from this project showed that supercritical CO2 technology is a non-flammable, zero ODP and low GWP technology and it shouldn't create any additional industrial hygiene and safety hazards for the use as a replacement for HCFC-141b technology.

Egypt

Low cost options for the use of Hydrocarbons (HC) as foaming agents in the manufacture of PU Foam were considered as part of a demonstration project in Egypt. The objective of this project was to develop, optimize, and disseminate low-cost systems for the use of hydrocarbons in the manufacture of PU rigid insulation and integral skin foams. Both options that are emerging from the project—pre-blended cyclopentane systems and direct HC injection—have been selected for ODS phase-out projects in Brazil and Egypt. The findings of the demonstration project show that further mixing head optimization would be beneficial and might enhance the foam densities and reduce operational costs. This optimization was finalized at a system house in Egypt with the complementary report with additional findings submitted in 2015.

Nigeria

The hydrocarbon production demonstration project, being implemented at Pamaque Ltd as part of the HPMP in Nigeria (Stage 1), has been completed in its pilot phase in 2015, and the pilot plant commissioned on 19 November 2015. The establishment of the distillation and bottling unit has proved to be functional and safe. The commercial production is linked to private sector's further involvement and investment and work and consultations are still ongoing in this regard. Replication abroad is also being considered. A side event on the project was organized by UNDP and the Government of Nigeria at the 27th MOP in Dubai (1-5 November 2015) and a final report of this pilot demonstration project was submitted as an Annex to the request for the 5th tranche of the first stage of the HPMP, approved at the 75th ExCom Meeting.

Turkey

A pilot project validating the use of HFO-1234ze as Blowing Agent in the Manufacture of Extruded

Polystyrene (XPS) Foam Boardstock in Turkey was designed to assess the use of HFO-1234ze in a developing country context. All planned production trials have been completed in 2011 and early 2012 and a final assessment was submitted to the 67th ExCom. The current findings show that there is a need for further trials as this will help obtain better assessment of the feasibility of the technology for developing countries. Unfortunately, funding for these additional activities was not approved so that no final conclusions about the technical feasibility of this technology could be arrived at.

A2. Demonstrations related to Stage II HPMPs

Pursuant to ExCom decision 72/40, UNDP is preparing additional projects to demonstrate climate-friendly and energy-efficient alternative technologies to HCFCs, and feasibility studies on district cooling. UNDP has prepared and received approval for eight demonstration projects for the following seven countries. Please, see the brief update on the status of projects.

- **China**: demonstrating ammonia semi-hermetic frequency convertible screw refrigeration compression unit in the industrial and commercial refrigeration industry.

  In order to produce the small discharge semi-hermetic frequency convertible screw refrigeration compression unit with ammonia as a viable replacement for HCFC-22 technology, the Executive Committee approved a demonstration project at its 76th meeting. The production line will be redesigned, modified and constructed to fit the small discharge semi-hermetic frequency convertible screw refrigeration compressor and compression unit. In order to expand the application of NH3 in the small and medium industrial and commercial refrigeration field, the type of NH3 compressor will be changed to semi-hermetic. With the prototype production, safety protection articles and training are needed for manufacturing personnel. The project has entered into the phase of implementation. The training for designers was held in December 2016. The design of compressors and pressure tanks have recently been finished. Some materials for manufacturing the prototypes have been procured. The project will be completed as planned.

- **Colombia:** Demonstration of HC-290 (propane) as an alternative refrigerant in commercial air-conditioning manufacturing at Industrias Thermotar ltda.

  Currently, the project is in the initial phase, developing the prototypes of the equipment and the review by the international expert of the safety aspects. The company has also carried out the process of selecting the supplier of the technology for the modification of production line and is preparing the prototypes to carry out the tests of performance and security.

- **Colombia:** Demonstration project to validate the use of hydrofluoro-olefins for discontinuous panels in Article 5 parties through the development of cost-effective formulations.

  A Collaboration Agreement between the local stakeholders (company and the Ministry of Environment) has been drawn up and signed. The project is in the second stage oriented to the development of formulations with HFO according to the experimental protocol designed with support of the international expert. Next steps will involve carrying out laboratory and field tests.

- **Costa Rica**: Demonstration of the application of an ammonia/carbon dioxide refrigeration system in replacement of HCFC-22 for the medium-sized producer and retail store of Premezclas Industriales S.A.

The project team is developing agreements, contracts and adjustments to the schedule in order to start the civil works for the assembly of the equipment. The evaluation of proposal for supplying the equipment has been conducted and the contract was signed.

- **Dominican Republic**: feasibility study for district cooling in Punta Cana.

  The study was conducted and a final report was prepared. The study showed that district cooling is a viable approach for this location, avoiding emission of ODS (future need of approximately 1000 kg can be avoided) and GHG (8.500 ton CO2/year reduction). A seminar to present the findings and results was organized and attracted the interest of many stakeholders.

- **Egypt**: demonstrating low-cost options for the conversion to non-ODS technologies in polyurethane foams at very small users.

  Project documentation has not yet been cleared by the Government, and once this milestone is achieved and the project is registered, the implementation works will commence in full. Initial technology provider survey and contacts (with one mission) have been made by the project team to save time and speed up the project implementation.

- **Kuwait**: demonstrating HCFC-free low-global warming potential technology performance in air-conditioning applications.

  Project documentation was signed with the Government in the beginning of 2017, and currently a joint work is being carried out to prepare technical specifications for procurement of the required demonstration equipment. International tender is to be announced in second quarter of 2017.

- **Maldives**: testing HCFC-free low-global warming potential alternatives in refrigeration in fisheries sector are being tested.

  Demonstration project for HCFC-free low-global warming potential alternatives in refrigeration in fisheries sector was approved at the 76th ExCom. The project results can be used in other countries that have similar HCFC use in fishing industry and thus help the countries addressing challenges in fishing industry, particularly sea-borne vessels' HCFC refrigerant use. The process of selection of the consultant is underway and the project will be completed in stipulated time.

B. ODS destruction demonstration projects

The UNDP Montreal Protocol & Chemicals Unit has been supporting countries to take steps to manage their stocks of ODS, which cannot be reused in a sound way. The potential for recovery, proper management and final disposal of such unwanted ODS and ODS containing appliances/equipment banked, have been proven as being possible in developed countries if the proper legislation and price incentives, as well as business opportunities, exist. However, the applicability of banks management schemes in developed countries needs to also be demonstrated in Article 5 countries. The Executive Committee has approved preparation activities for Brazil, Colombia, Cuba, Georgia, Ghana and India, to address ODS waste management leading to ODS destruction. Five such projects (Brazil, Colombia, Cuba, Georgia, and Ghana) have been submitted and approved by the Executive Committee in prior years.

The project in **Brazil** is advancing in both, strengthening of the collection center network (reclaim centers) and identification of possible locations for the destruction facility. A procurement process to purchase the

required equipment to strengthen the reclaim center is ongoing and expected to be finalized in May 2017. Regarding the destruction facility, a potential incinerator located in São Paulo/SP was identified through an Expression of Interest. This process is being finalized and the official result should be available in May 2017. In addition, a meeting with CETESB, the Environmental Agency of São Paulo state, was held in order to present the project and to agree the role of this important stakeholder in the project implementation.

The project in **Colombia** has advanced on two fronts, the assessment of the local capabilities to destroy ODS and the establishment of a scheme for sound environmental disposal of equipment containing ODS. Regarding the assessment, two burning tests have been conducted, collected data was analyzed by the international expert. Findings show that the country has the capability to dispose of the ODS locally but continuous monitoring of the destruction facility and the feed rate is required to ensure the fulfillment of the local emission regulations. Concerning the scheme for the sound environmental management of ODS containing equipment, advances have been made to put in place a voluntary extended producer responsibility scheme, initially for domestic refrigerators, that would support the collection and disposal of ODS containing equipment.

Cuba: All the civil works and burning tests were completed, leading to start the destruction of ODS in Cuba, nevertheless the supply of material for destruction and the control of the feed current into the kiln are challenging which has been a key aspect highlighted in other projects of this kind.

The project in **Georgia** has been completed and enabled export and disposal of ODS waste in partnership with a parallel GEF-funded POPs pesticides destruction project. Currently, a final report is being prepared for submission to the MLF Secretariat. Overall, 1.5 tons of ODS waste was exported for sound disposal to EU. Lessons learned will be reflected in the report.

From the **Ghana** demonstration project, the lesson was that a specific strategy and methodology should be devised during the design stage to deal with the foam part of the refrigerators, and not only focusing on ODSs to be collected as refrigerants. In Ghana it was possible to find an environmentally adequate solution through the cooperation with other ongoing projects in the country to make sure that the foam was disposed of and that gases in the foam would be appropriately managed.

C. Country Highlights (January – December 2016)

UNDP has been at the forefront of innovative solutions for countries to address their Montreal Protocol compliance obligations. UNDP's work has resulted in market transformation for the introduction of environment-friendly products and corresponding policy and technological advances and has bought to countries access to emerging technologies, reduced energy bills for consumers, fostered innovation, and created a more equitable market for greener products, allowing indigenous manufacturers to maintain competitiveness.

The next section showcases several prominent examples showing the impact of UNDP's support at the country level.

Colombia

At the 76th meeting of the ExCom in May 2016, funds were approved for the development of the demonstration project "Demonstration project to validate the use of Hydrofluoro Olefins (HFO) for discontinuous panels in Article 5 parties through the development of cost effective formulations". This project undertakes the validation of the Hydrofluoro Olefins (HFOs), a low GWP and non-flammable

option, for discontinuous panels in the scenario of the Article 5 parties through the development of polyurethane (PU) foam formulations with reduced HFO contents that have CO2, derived from the water-isocyanate reaction, as co-blowing agent. The aim is to optimize the cost/performance balance while achieving a similar foam thermal performance to that of HCFC-141b based formulations. The results of this project will support the implementation of the foam component of several HPMP in the country and around the globe.

Costa Rica

UNDP and the Government of Costa Rica are working to implement a demonstration project aimed to the application of an ammonia/carbon dioxide (R-717/R-744) refrigeration system in replacement of HCFC-22 for the medium-sized producer and retail store at Premezclas Industriales S.A. in Costa Rica which was approved during the 76th meeting of the ExCom. This project will allow to identify the key aspects that need to be considered when using R-717/R-744 as alternative to HCFC-22. The information collected will be used for developing standards and guidelines for the design, installation and operation of this kind of systems in countries with similar climatic conditions as those of Costa Rica.

Chile

UNDP and the Governments of Colombia and Chile worked together to promote the exchange of experiences concerning the approach to phase out the use of HCFC-141b as flushing agent during the maintenance of refrigeration and air conditioning systems. Technical personnel of Colombia's NOU visited Chile to support the activities conducted by their Chilean counterparts, explaining the approach used in Colombia for phasing out this use. This exchange strengthened the relationship between NOUs and created knowledge networks that foster the ODS phase out activities in the countries.

Egypt

As a part of the Stage 1 HPMP, the Government of Egypt and UNDP have successfully completed all approved individual PU foam programmes – 6 enterprises have transitioned to non-ODP/low GWP technologies such as methyl formate and hydrocarbons (HC). The results of previous low-cost HC demonstration programme were useful in addressing HCFC-141b consumption in PU foam companies with lower HCFC use, where otherwise HC technologies would not be implemented due to higher capital costs. In the past, activities focused on the system house level with polyol blending enterprises participating and initiating chemical formula preparation with methyl formate, methylal and other technologies to transfer them to downstream users. Currently, UNDP is focusing on the start-up of the demonstration projects, such as on very-small PU foam users in Egypt, aimed to reduce equipment costs and ensure better utilization of MLF funds. The programme is in initial stages of implementation, going through registration phase with the Government.

Kyrgyzstan

In 2015, the Government of Kyrgyzstan and UNDP/UNEP jointly formulated an accelerated HCFC phase-out programme to achieve by 2020 a 97.5% reduction in the servicing sector with a service tail of 2.5% remaining until 2025. This HCFC reduction ahead of usual phase-out time was a decision of the Government based on its accession to the Customs Union's framework constituted by Art 2 group of countries in the former Soviet Union where HCFCs use is controlled by accelerated schedules and this recommendation was adopted by Kyrgyzstan for its own context. The Stage II HPMP programme was approved in May 2015 and is now in its implementation phase on the ambitious path towards substantive HCFC phase-out by 2020. The programme had its inception round of workshops, and plans for an initial R&R tool procurement round to further strengthen the country's capability to address its dependence on HCFCs are underway. The project is currently working to equip professional vocational schools with interactive training equipment and is starting to establish contacts with future employers of graduate

students to ensure on-job practical training and confidence in future employment opportunities in the servicing sector. This is one of new approaches for the servicing sector ensuring less drop-out rates from vocational schools, or changes in careers after the graduation due to low earnings.

Maldives

UNDP supported the Government of Maldives to retrofit the fishery vessels charged with HCFC-22. Five conversions have been completed in 2016. As no drop-in substitute was not available at that time so the country opted for R438A, which have slightly higher GWP than HCFC 22. After retrofitting the units are running in perfect state without any failure. Maldives in now promoting reclamation of HCFC-22 within the country.

Mauritius (GEF)

UNDP and the Government of Mauritius had prepared and submitted to GEF a new conceptual approach for energy audits of installed larger RAC equipment, preventive maintenance via online performance monitoring and market transformation to enable uptake of energy efficient low-GWP technologies while skipping HFC solutions (supported by an incentive system). This project concept was technically cleared by GEF, awaiting financial acceptance. The cooperation is established with the HPMP programme implemented by GIZ.

Sri Lanka

In Sri Lanka, the Government received support from UNDP in promoting the reclamation of refrigerants and Colombo has received the large amount of HCFC-22 for reclamation. This demonstrates the need for more equipment in the refrigeration and air conditioning sector. Thanks to the efforts of the National Ozone Unit, the Government of Sri Lanka has approved 30% duty on HCFCs starting 1st January 2017 and further from 1st January 2018 there will be a complete ban on imports of HCFC based equipment. This is the major achievement that will reduce the imports of HCFCs and lead to adoption of alternate technology products.

A side event at MOP-28 on Conversion Projects from HFCs to Hydrocarbons in the Refrigeration Manufacturing Sector (Walton, Bangladesh and Palfridge, Swaziland)

At the 28th MOP in Kigali, Rwanda UNDP, together with the US Department of State and GIZ, has organized a side event to showcase the experiences of Walton and Palfridge in selecting hydrocarbons as alternatives to phase down HFCs in refrigerator manufacturing operations. During the time of the CFC phase-out, some enterprises directly phased out their use of CFC-12 to iso-butane, while others chose to move to HFC-134a technology. As HFCs are not yet a part of the Montreal Protocol, the Multilateral Fund has not funded the transition from HFC-134a to iso-butane. However, two such transitions have already taken place at Walton, Bangladesh (funded by the US Department of State) and Palfridge, Swaziland (funded by GIZ).

Through MLF funding, UNDP assisted Walton in its conversion from HCFCs to hydrocarbons. Additional funding was made available from the US Department of State to phase out the use of HFC-134a as a refrigerant and adopt iso-butane in one production line of the domestic refrigeration manufacturing facility. This latter effort would result in about 65 MT of HFC-134a reduction on an annual basis through the elimination of the initial charge, or 85,300 tonnes CO2 equivalent per year (only refrigerant charge related). In addition, a saving of about 14 million KWH annually is expected through energy efficiency improvements in the product (at baseline production levels), leading to additional

climate benefits.

With the financial support and technical assistance from GIZ Proklima, one of Swaziland's largest private companies and employers is a refrigeration company, Palfridge Limited / The Fridge Factory took a decision to convert their production lines to the use of natural refrigerants. The project converted the entire production of domestic and commercial refrigeration appliances to hydrocarbon refrigerants (domestic fridges, commercial refrigerators for supermarkets and bottle coolers, solar refrigerators including a solar-powered vaccine cooler). The conversion of the annual production of approx. 60,000 units to natural refrigerants cut direct emissions of F-gases by up to 14,800 tonnes CO2 equivalent per year; the new units save more than 20% energy consumption compared to conventional ones. Following this transition to climate-friendly refrigerants, Palfridge was subsequently supported to convert from HCFC-141b to cyclo-pentane for the foam used in its refrigerators – this transition was supported by UNDP through Swaziland's MLF-funded HPMP (for which UNEP is the lead agency).

VIII. ADMINISTRATIVE ISSUES (OPERATIONAL, POLICY, FINANCIAL, OTHER)

A. **Meetings Attended by UNDP in 2016**

From	To	Country	Meeting
13-Jan-16	15-Jan-16	China	Policy Support and Programme Oversight
9-Feb-16	12-Feb-16	Uruguay	Policy Support and Programme Oversight
9-Feb-16	12-Feb-16	Peru	Policy Support and Programme Oversight
14-Feb-16	19-Feb-16	India	Policy Support and Programme Oversight
15-Feb-16	18-Feb-16	Maldives	Policy Support and Programme Oversight
20-Feb-16	25-Feb-16	Kuwait	Policy Support and Programme Oversight
29-Feb-16	1-Mar-16	Canada	Policy Support and Programme Oversight
29-Feb-16	2-Mar-16	Canada	Policy Support and Programme Oversight
29-Feb-16	4-Mar-16	Kyrgyzstan	Policy Support and Programme Oversight - Bishkek
5-Mar-16	9-Mar-16	Angola	Policy Support and Programme Oversight
15-Mar-16	21-Mar-16	Zimbabwe	Policy Support and Programme Oversight West Asia Network Meeting
17-Mar-16	22-Mar-16	Zimbabwe	Regional joint network meeting of ozone officers - West Asia and Northern Africa (organized by UNEP CAP) - Victoria Falls
21-Mar-16	23-Mar-16	Georgia	Policy Support and Programme Oversight - Tbilisi
3-Apr-16	9-Apr-16	Switzerland	37th Open Ended Working Group
4-Apr-16	8-Apr-16	Switzerland	Policy Support and Programme Oversight
11-Apr-16	12-Apr-16	France	UNEP-International Stakeholder workshop- assessment of Training in Refrigeration Servicing sector (organized by UNEP CAP) - Paris
12-Apr-16	16-Apr-16	Paraguay	Policy Support and Programme Oversight
7-May-16	15-May-16	Canada	76th Executive Committee Meeting
9-May-16	11-May-16	Nigeria	Policy Support and Programme Oversight, Lagos and Abuja
9-May-16	13-May-16	Canada	Policy Support and Programme Oversight
15-May-16	20-May-16	Chile	Regional network meeting of ozone officers - Latin America and the Caribbean (organized by UNEP CAP) - Santiago de Chile.

From	To	Country	Meeting
22-May-16	24-May-16	Egypt	Policy Support and Programme Oversight - Cairo
23-May-16	24-May-16	Dominican Republic	Policy Support and Programme Oversight
26-May-16	27-May-16	Turkmenistan	Regional network meeting of ozone officers - Europe and Central Asia (organized by UNEP CAP) - Ashgabat
1-Jun-16	3-Jun-16	Colombia	Policy Support and Programme Oversight
8-Jun-16	10-Jun-16	Uruguay	Policy Support and Programme Oversight
12-Jun-16	18-Jun-16	Fiji	Policy Support and Programme Oversight
30-Jun-16	5-Jul-16	India	Policy Support and Programme Oversight
4-Jul-16	6-Jul-16	Dominican Republic	Policy Support and Programme Oversight
15-Jul-16	16-Jul-16	Austria	37th Open Ended Working Group (Resumed)
18-Jul-16	21-Jul-16	Austria	38th Open Ended Working Group, Vienna
25-Jul-16	29-Jul-16	Timor-Leste	Policy Support and Programme Oversight
31-Jul-16	3-Aug-16	Egypt	Policy Support and Programme Oversight, Cairo
2-Aug-16	5-Aug-16	India	Policy Support and Programme Oversight
7-Aug-16	10-Aug-16	Iran	Policy Support and Programme Oversight
24-Aug-16	26-Aug-16	Indonesia	Policy Support and Programme Oversight
30-Aug-16	2-Sep-16	Canada	Policy Support and Programme Oversight
9-Sep-16	14-Sep-16	China	Policy Support and Programme Oversight
11-Sep-16	13-Sep-16	El Salvador	Policy Support and Programme Oversight
14-Sep-16	16-Sep-16	Brazil	Policy Support and Programme Oversight
14-Sep-16	16-Sep-16	Dominican Republic	Policy Support and Programme Oversight
19-Sep-16	22-Sep-16	Sweden	Policy Support and Programme Oversight
20-Sep-16	21-Sep-16	Swaziland	Policy Support and Programme Oversight, Mbabane
8-Oct-16	13-Oct-16	Rwanda	28th Meeting of the Parties
10-Oct-16	15-Oct-16	Rwanda	Policy Support and Programme Oversight
7-Nov-16	11-Nov-16	Moldova	Regional network meeting of ozone officers - Europe and Central Asia (organized by UNEP CAP) - Chisinau
25-Nov-16	2-Dec-16	Canada	Policy Support and Programme Oversight
28-Nov-16	2-Dec-16	Canada	Policy Support and Programme Oversight
6-Dec-16	8-Dec-16	Barbados	Regional network meeting of ozone officers - Latin America and the Caribbean for English speaking countries and Haiti (organized by UNEP CAP) - Bridgetown.
22-May-17	28-May-17	Malaysia	Policy Support and Programme Oversight

B. **Other Issues.**

There were no specific issues in 2016 that need to be addressed

ANNEX 1: Tables related to the Performance Indicators

1. Performance Indicator 1: MYAs

Approvals for multi-year agreements are listed in the following table.

Country	Short Title
Angola	Stage I HPMP
Armenia	Stage II HPMP
Bhutan	Stage I HPMP
Chile	Stage II HPMP (foam sector)
Chile	Stage I HPMP
China	Stage II HPMP (industrial and commercial refrigeration and air-conditioning sector plan)
China	Stage II HPMP (solvent sector plan)
Cuba	Stage I HPMP
Dominican Republic	Stage II HPMP
El Salvador	Stage I HPMP
Fiji	Stage I HPMP
Ghana	Stage I HPMP
Haiti	Stage I HPMP
Indonesia	Stage I HPMP
Indonesia	Stage II HPMP (firefighting sector)
Indonesia	Stage II HPMP (refrigeration servicing sector)
India	Stage II HPMP (polyurethane foam sector plan)
India	Stage II HPMP (air-conditioning manufacturing sector plan)
India	Stage II HPMP (project management and monitoring)
Iran	Stage II HPMP(foam sector)
Jamaica	Stage I HPMP
Cambodia	Stage I HPMP
Malaysia	Stage II HPMP (polyurethane foam sector)
Malaysia	Stage I HPMP
Malaysia	Stage II HPMP(refrigeration servicing sector)
Malaysia	Stage II HPMP (management and coordination)
Mali	Stage I HPMP
Moldova	Stage II HPMP
Panama	Stage II HPMP (foam sector)
Panama	Stage II HPMP (refrigeration servicing sector)
Sri Lanka	Stage I HPMP
Uruguay	Stage II HPMP (foam sector)
Uruguay	Stage II HPMP (refrigeration servicing sector)
Uruguay	Stage II HPMP (implementation and monitoring)
Venezuela	Stage II HPMP (foam sector)

2. Performance Indicator 2: Individual Projects

The number of individual projects approved in 2016 are listed in the following table.

Country	Short Title
Argentina	Extension for institutional strengthening project (phase IX: 7/2016-6/2018)
Bangladesh	Renewal of the institutional strengthening project (phase VIII: 1/2017-12/2018)
Colombia	Demonstration project to validate the use of hydrofluoro-olefins for discontinuous panels in Article 5 parties through the development of cost-effective formulations
Costa Rica	Demonstration of the application of an ammonia/carbon dioxide refrigeration system in replacement of HCFC-22 for the medium-sized producer and retail store of Premezclas Industriales S.A.
China	Demonstration project for ammonia semi-hermetic frequency convertible screw refrigeration compression unit in the industrial and commercial refrigeration industry at Fujian Snowman Co. Ltd.
China	Extension of the institutional strengthening project (phase XII: 1/2017-12/2018)
Egypt	Demonstration of low-cost options for the conversion to non-ODS technologies in polyurethane foams at very small users
Ghana	Extension of the institutional strengthening project (phase XII: 1/2017-12/2018)
Global	Core unit budget (2017)
India	Extension of institutional strengthening project (phase X: 4/2016-3/2018)
Iran	Extension of the institutional strengthening project (phase XI: 4/2017-3/2019)
Kuwait	Demonstration project for HCFC-free low-global warming potential technology performance in air-conditioning applications (capacity above 8TR)
Kyrgyzstan	Verification report for stage I of HCFC phase-out management plan
Lebanon	Extension of the institutional strengthening project (phase X: 4/2017-3/2019)
Maldives	Demonstration project for HCFC-free low-global warming potential alternatives in refrigeration in fisheries sector
Nigeria	Extension of the institutional strengthening project (phase X: 12/2016-11/2018)
Pakistan	Extension of the institutional strengthening project (phase IX: 4/2017-3/2019)
Sri Lanka	Extension of the institutional strengthening project (phase XI: 1/2017-12/2018)
Venezuela	Renewal of institutional strengthening project (phase XIII: 1/2017-12/2018)

3. Performance Indicator 3: Funds disbursed

2016 Disbursements	25,076,224

4. Performance Indicator 4: 2016 ODS phase-out

MLF Number	Short Title	ODP to be Phased Out
ANG/PHA/77/INV/18	HCFC phase-out management plan (stage I, fourth tranche)	0
ARM/PHA/77/INV/18	HCFC phase-out management plan (stage II, first tranche)	0
BHU/PHA/76/TAS/26	HCFC phase-out management plan (third tranche)	0.1
CHI/PHA/76/INV/190	HCFC phase-out management plan (stage II, first tranche) (foam sector)	12
CHI/PHA/76/INV/192	HCFC phase-out management plan (stage I, fourth and fifth tranches)	5.9
CPR/PHA/77/INV/577	HCFC phase-out management plan (stage II, first tranche) (industrial and commercial refrigeration and air-conditioning sector plan)	72.1
CPR/PHA/77/INV/580	HCFC phase-out management plan (stage II, first tranche) (solvent sector plan)	0

MLF Number	Short Title	ODP to be Phased Out
CUB/PHA/77/INV/56	HCFC phase-out management plan (stage I, third tranche)	0
DOM/PHA/77/INV/60	HCFC phase-out management plan (stage II, first tranche)	0
ELS/PHA/77/INV/34	HCFC phase-out management plan (stage I, third tranche)	2
FIJ/PHA/77/INV/31	HCFC phase-out management plan (stage I, third tranche)	1.2
GHA/PHA/76/INV/42	HCFC phase-out management plan (stage I, fourth tranche)	0
HAI/PHA/76/INV/22	HCFC phase-out management plan (stage I, second tranche)	0.4
IDS/PHA/76/INV/208	HCFC phase-out management plan (stage I, third tranche) (refrigeration and air-conditioning sector)	9
IDS/PHA/76/INV/211	HCFC phase-out management plan (stage II, first tranche) (firefighting sector)	0
IDS/PHA/76/TAS/210	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing sector)	0
IND/PHA/77/INV/468	HCFC phase-out management plan (stage II, first tranche) (polyurethane foam sector plan)	114
IND/PHA/77/INV/469	HCFC phase-out management plan (stage II, first tranche) (air-conditioning manufacturing sector plan)	25
IND/PHA/77/TAS/472	HCFC phase-out management plan (stage II, first tranche) (project management and monitoring)	0
IRA/PHA/77/INV/226	HCFC phase-out management plan (stage II, first tranche) (foam sector)	23.8
JAM/PHA/76/INV/36	HCFC phase-out management plan (stage I, third tranche)	0
KAM/PHA/76/INV/33	HCFC phase-out management plan (third tranche)	0
MAL/PHA/77/INV/181	HCFC phase-out management plan (stage II, first tranche) (polyurethane foam sector)	38.3
MAL/PHA/77/INV/184	HCFC phase-out management plan (stage I, fourth tranche) (refrigeration servicing, management and coordination)	0.8
MAL/PHA/77/TAS/182	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing sector)	45.3
MAL/PHA/77/TAS/183	HCFC phase-out management plan (stage II, first tranche) (management and coordination)	0
MLI/PHA/76/INV/38	HCFC phase-out management plan (stage I, third tranche)	2.6
MOL/PHA/77/INV/34	HCFC phase-out management plan (stage II, first tranche)	0.2
PAN/PHA/76/INV/44	HCFC phase-out management plan (stage II, first tranche) (foam sector)	2.5
PAN/PHA/76/TAS/43	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing sector)	0
SRL/PHA/76/INV/49	HCFC phase-out management plan (stage I, third tranche)	2.1
URU/PHA/77/INV/67	HCFC phase-out management plan (stage II, first tranche) (foam sector)	1
URU/PHA/77/TAS/68	HCFC phase-out management plan (stage II, first tranche) (refrigeration servicing sector)	0
URU/PHA/77/TAS/69	HCFC phase-out management plan (stage II, first tranche) (implementation and monitoring)	0
VEN/PHA/76/INV/133	HCFC phase-out management plan (stage II, first tranche) (foam sector)	2.4

5. Performance Indicator 5: Projects completed in 2016.

The following 24 projects were completed in 2016:

MLF Number	Actual Completion Date
ANG/PHA/72/INV/12	Oct-16
ANG/PHA/75/INV/16	Nov-16
BRA/FOA/72/PRP/301	Nov-16
BRA/SEV/66/INS/297	Dec-16
CHI/FOA/73/PRP/183	Nov-16
CHI/PHA/73/PRP/182	Nov-16
COL/PHA/72/INV/89	Dec-16
COL/SEV/70/INS/83	Mar-16
COS/PHA/70/INV/48	Apr-16
COS/REF/74/PRP/51	Dec-16
ELS/PHA/74/INV/31	Dec-16

GHA/SEV/72/INS/38	Dec-16
GLO/SEV/75/TAS/331	Dec-16
JAM/PHA/70/INV/32	Jul-16
PAN/FOA/72/PRP/37	Dec-16
PAN/PHA/72/PRP/38	Dec-16
PAN/SEV/71/INS/36	Jun-16
PAR/FOA/57/PRP/21	Dec-16
PER/PHA/68/INV/46	May-16
TRI/PHA/71/TAS/30	Dec-16
URU/PHA/72/PRP/61	Dec-16
URU/PHA/75/INV/66	Dec-16
VEN/FOA/72/PRP/126	Dec-16

6. Performance Indicator 6: Final Revisions

Last year's database counted 81 projects operationally completed before 1 Jan 2016, which could have been financially completed in 2016. This year's database counts 55 projects for which a final revision was issued in 2016, which equals 68% of the total or 96.5% of our target of 57 projects.

7. Performance Indicator 7: PCRs

100% achieved (1 multi-year PCRs and 8 individual PCR submitted out of 3 PCRs scheduled for submission in 2016).

8. Performance Indicator 9

Progress Report produced on 1 May 2017 as required.