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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Sixty-eight Meeting
Montreal, 3-7 December 2012

PROJECT PROPOSALS: EGYPT

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

Phase-out

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

UNIDO/UNDP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Egypt

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

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2011	355.6 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2011	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab Use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123	0	0	0	0	0.13	0	0	0	0.13
HCFC-124	0	0	0	0	0	0	0	0	0
HCFC-141b	0	102.3	0	0	0	0	0	0	102.3
HCFC-141b in Imported Pre-blended Polyol	0	46.0	0	0	0	0	0	0	46.0
HCFC-142b	0	15.8	0	0	0	0	0	0	15.8
HCFC-22		3.3	0	175.5	58.5	0	0	0	237.3

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	386.30	Starting point for sustained aggregate reductions:	484.61
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	174.00	Remaining:	310.61

(V) BUSINESS PLAN		2012	2013	2014	2015	2016	2017	2018	Total
UNDP	ODS phase-out (ODP tonnes)	38.7	0.0	0.0	0.0	0.0	0.0	13.9	52.6
	Funding (US \$)	2,150,000	0	0	0	0	0	770,130	2,920,130
UNIDO	ODS phase-out (ODP tonnes)	4.8						4.5	9.3
	Funding (US \$)	268,750						250,018	518,768

(VI) PROJECT DATA			2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Montreal Protocol consumption limits			n/a	n/a	n/a	386.3	386.3	347.6	347.6	347.6	347.6	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	386.3	386.3	347.6	347.6	347.6	289.7	n/a
Agreed Funding (US\$)	UNDP	Project costs	1,479,000	2,000,000	2,000,000	0	0	0	0	0	716,400	6,195,400
		Support costs	115,463	150,000	150,000	0	0	0	0	0	53,730	469,193
	UNIDO	Project costs	892,840	950,000	250,000	0	0	0	0	0	232,575	2,325,415
		Support costs	66,963	71,250	18,750	0	0	0	0	0	17,443	174,406
Funds approved by ExCom (US\$)	Project Costs	2,371,840	2,950,000	0	0	0	0	0	0	0	0	5,321,840
	Support Costs	182,426	221,250	0	0	0	0	0	0	0	0	403,676
Total funds requested for approval at this meeting (US\$)	Project Costs	0	0	2,250,000	0	0	0	0	0	0	0	2,250,000
	Support Costs	0	0	168,750	0	0	0	0	0	0	0	168,750

Secretariat's recommendation:	Individual Consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of Egypt UNIDO as the lead implementing agency, has submitted to the 68th meeting of the Executive Committee a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP) at a total cost of US \$2,418,750, consisting of US \$2,000,000, plus agency support costs of US \$150,000 for UNDP, and US \$250,000, plus agency support costs of US \$18,750 for UNIDO. The submission includes a progress report on the implementation of the first tranche of the HPMP together with a verification report on HCFC consumption in Egypt, and annual implementation plans for 2013.

Background

2. The HPMP for Egypt was approved by the Executive Committee at its 65th meeting, to reduce HCFC consumption by 25 per cent of the baseline by the end of 2018, at a total funding level in principle of US \$8,520,815, plus agency support costs of US \$643,599. This included US \$892,840 plus agency support costs of US \$66,963 for UNIDO to phase out 17.6 ODP tonnes of HCFC-141b used in the production of foams in two enterprises; and US \$1,479,000, plus agency support cost of US \$115,463 for UNDP to phase out 37.4 ODP tonnes of HCFC-141b in the production of foams in four enterprises, approved at the 62nd meeting. Also at the 65th meeting, the Executive Committee approved US \$950,000, plus agency support cost of US \$71,250 for UNIDO and US \$2,000,000, plus agency support costs of US \$150,000 for UNDP for the implementation of the first tranche of the HPMP.

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

3. The main activities to be implemented during stage I of the HPMP consist of: regulatory actions by the Government of Egypt; conversion of foam enterprises to non-HCFC based technologies; activities in the refrigeration servicing sector; and, support to the project implementation and monitoring unit.

Regulatory actions by the Government of Egypt

4. UNIDO has established an electronic data management system for licensing operations as part of the final tranche of the National Phase-out Plan for CFCs (NPP). The system, which will effectively control HCFCs, HCFC-141b contained in imported pre-blended polyols and other chemical-like HFCs, will be fully operational by 1 January 2013 by connecting the National Ozone Unit (NOU), the Customs Authorities, the Ministry of Trade and other relevant bodies involved in licensing operations. The system enables a gas chromatograph to the Customs Authorities that allows the identification of HCFCs from samples taken at the point of importation.

Conversion of foam manufacturing enterprises

5. Stage I of the HPMP includes the conversion to cyclopentane technology by four enterprises manufacturing insulation foam for refrigeration equipment. Funding for three of these was approved at the 62nd meeting, namely Mondial Freezers Company, Delta Electric Appliances, and El-Araby Co. For Engineering Industries. As reported in the project document submitted to the 65th meeting, subsequent to the submission of the HPMP for Egypt, the Government informed UNIDO that Delta Electrical Appliances with an associated consumption of 80.91 mt (8.90 ODP tonnes) of HCFC-141b, was purchased by a non-Article 5 foreign enterprise and was therefore ineligible for funding. As proposed by UNIDO the project has been cancelled and the approved funding of US \$422,740, plus agency support costs of US \$31,706, has been returned to the Multilateral Fund at the 69th meeting.

6. Implementation of the three eligible enterprises is going well. With regard to Mondial Freezers Company and El-Araby Co. for Engineering Industries, the equipment required for the conversion is expected to be delivered by the end of 2012 with full conversion of the enterprises by May 2013. With

regard to Kiriazi Refrigerators Factory delivery of equipment is expected during the first quarter of 2013 with full conversion by May 2013.

7. Stage I of the HPMP also includes the conversion to low global warming potential (GWP) alternative technologies of six foam enterprises manufacturing rigid and integral foam products. With regard to the Specialized Engineering Contracting Co., trials with methyl formate have been conducted and equipment providers are under consideration. The enterprise will be converted in early 2013 using methyl formate pre-blended polyols supplied by a local systems house. The equipment required for MOG Engineering and Industry will be installed by May 2013 and the enterprise will be fully converted by August 2013. Successful trials with methyl formate at Fresh Electric Home Appliances were completed in February 2012, the required equipment will be installed by May 2013, and the conversion completed by August 2013. Subsequent to the approval of the project, Cairo Foam consolidated its three manufacturing facilities into one, which delayed the installation of the equipment to May 2013 as layout plans needed to be revised. The enterprise will be fully converted by August 2013. With regards to Reftruck and Al Fateh for Engineering and General Contracting implementation agreements with each enterprise have been finalized and are expected to be fully converted by March 2014.

8. Implementation of the conversion to methyl formate technology of the 81 SMEs with the support from their systems suppliers, with a total phase-out of 666.20 mt (73.28 ODP tonnes) of HCFC-141b, is progressing well. Meetings with each participating systems house were conducted in September 2012 and memorandum of agreements (MOAs) were drafted and signed by each one in October 2012. Each MOA contains specific provisos for the technical assistance and support that will be given to the downstream foam customers. Concurrently with this process, systems houses have started the development of non-HCFC-based pre-blended polyols, which are expected to be available in the local market early 2013 (Table 1). Assistance to the foam enterprises will be provided once non-HCFC pre-blended polyols are available.

Table 1. Non-HCFC technologies selected by systems houses in Egypt

Systems house	Technology choice
Baalbaki	Methyl formate
Bayer (*)	Water-blown for non-critical applications Methyl formate for spray foam applications HFCs/HFOs or hydrocarbons for refrigeration insulation foam Still considering methylal for integral skin applications
Dow Chemical (*)	Water-blown/HFCs followed by HFOs and hydrocarbon Still considering methylal for low auxiliary blowing agent formulations
Obegi (**)	Methyl formate (preliminary decision)
Redachem	On hold, as the enterprise is currently not producing due to a fire
Technocom	Methyl formate for spray foam applications Water-blown for shoe soles applications HFCs/HFOs and hydrocarbons for panels and refrigeration insulation foam

(*) Foreign-owned enterprise. No funding will be provided for retrofitting their facilities; however, it will provide technical assistance and support to its downstream foam customers.

(**) It has been confirmed that the enterprise is owned by Article 5 capital and not from the United Arab Emirates, as it was assumed at the time of the approval of the HPMP. The enterprise will be retrofitted with the funding approved in stage I of the HPMP.

Activities in the refrigeration servicing sector

9. Implementation of activities in the refrigeration servicing sector began in May 2012 with a coordination meeting between representatives from the Government and key stakeholders to whom the objectives and scope of the activities were explained. The NOU, supported by UNIDO, has initiated the process of selecting two enterprises that will be upgraded as demonstration servicing centres for the use of

low-GWP refrigerants, and an educational institution for the training and certification of refrigerant technicians.

Project implementation and monitoring unit

10. An HPMP Coordinating Unit has been established within the NOU. All activities are supported by UNIDO's field office, located in Cairo which will continue providing regular overall project monitoring, supervision and compliance verification as well as technical support. .

Level of funding disbursement

11. As of October 2012, of the total funding of US \$5,321,840 so far approved, US \$2,531,056 had been disbursed or committed. The remaining funding of US \$2,790,784 will be disbursed in 2013, as shown in Table 2.

Table 2. Financial report of the first tranche of the HPMP for Egypt

Activity	Agency	Funds (US \$)			
		Approved	Disbursed	Committed	Balance
El-Araby	UNIDO	456,540	57,123	399,411	6
Mondial	UNIDO	436,300	55,098	371,214	9,988
Kiriazzi	UNIDO	564,575	-	548,550	16,025
MOG	UNDP	790,400	81,900	440,000	268,500
Fresh	UNDP	124,500	1,266	100,000	23,234
SECC	UNDP	178,000	12,797	20,000	145,203
Cairo Foam	UNDP	386,100	1,845	210,000	174,255
Al Fateh	UNDP	346,300	-	30,000	316,300
Refrtruck	UNDP	569,500	-	50,000	519,500
Systems houses	UNDP	1,084,200	12,813	120,000	951,387
Enabling activities	UNIDO	221,000	-	-	221,000
Project management unit	UNIDO	164,425	6,625	12,414	145,386
Total		5,321,840	229,467	2,301,589	2,790,784

Annual plans for the second tranche of the HPMP

12. During the second funding tranche of the HPMP for Egypt, all stand-alone enterprises will be fully converted to non-HCFC based technologies. Systems houses will continue developing non-HCFC-141b pre-blended polyols and facilities will be retrofitted with explosion proof blending tanks (where applicable) and any supplementary process equipment required. Assistance to the downstream foam enterprises will be initiated in April/May 2013.

13. Activities in the refrigeration servicing sector will include:

- (a) Designing and supervising refrigeration and air-conditioning enabling activities, in particular the establishment of the training centre and the demonstration recovery/recycling/retrofit centres;
- (b) Developing a regulatory programme for establishing standards, rules and code of practice in the use of hydrocarbon and other natural refrigerants. Through the certification procedures it is envisaged that unified energy and environmental labels for manufactured and/or imported air conditioners could serve as incentives for increased manufacture and/or use of low GWP-based air conditioning units;
- (c) Upgrading a minimum of two refrigeration and air conditioning service centres that were

established through the NPP and focusing on the use of hydrocarbon and other natural refrigerants. This project component which will assist in introducing best service practices for refrigeration and air-conditioning equipment including recovery and recycling, will also assist in the safe conversion of residential air conditioners and other equipment to more energy and potentially more cost-efficient alternatives. In future the selected centres will also act as hands-on demonstration and training centres to augment the activities of the educational institutional training centre; and

- (d) Upgrading a training centre in an educational institution as a centre for training and certifying technicians.

14. Assistance to the project management unit will continue to be provided.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Operational license system

15. In line with decision 63/17 and as required under the Agreement between the Government of Egypt and the Executive Committee, confirmation has been received from the Government that an enforceable national system of licensing and quotas for HCFC imports and exports is in place and that the system is capable of ensuring compliance with the Montreal Protocol HCFC phase-out schedule. All importers of ODS and/or ODS-based equipment must have a license issued by the Ministry of Trade and registered by the Ministry of Finance. The licensing system is based on a quota system managed by the NOU, which is the only entity that can issue quotas based on the maximum amounts allowed under the Montreal Protocol.

HCFC consumption

16. The established HCFC baseline for compliance of 386.3 ODP tonnes is equal to that in the Agreement between the Government of Egypt and the Executive Committee; therefore no adjustments to the Agreement are required. HCFC consumption decreased from 396.6 ODP tonnes in 2009 to 355.58 ODP tonnes in 2011. Based on preliminary data, a consumption of 346.77 ODP tonnes has been estimated for 2012 (Table 3). Implementation of the phase-out activities will result in a substantive reduction in the consumption of HCFCs, particularly HCFC-141b. Accordingly, it is expected that Egypt will be in compliance with the 2013 control target.

Table 3. HCFC consumption in Egypt (2007-2011 Article 7 data; 2012 estimated)

HCFC	2007	2008	2009	2010	2011	2012*	Baseline
Metric tonnes							
HCFC-22	4,696.2	4,178.6	4,515.3	4,219.0	4,315.47	4,273.00	4,367.2
HCFC-123		2.0	7.0	3.5	6.50	6.00	5.3
HCFC-124	32.4			0.4	-	-	0.2
HCFC-141b**	1,411.8	970.1	1,209.0	1,147.6	930.06	869.46	1,178.3
HCFC-142b	291.1	243.6	232.7	270.5	242.99	246.00	251.6
Total (mt)	6,431.5	5,394.3	5,964.0	5,641.0	5,495.02	5,394.46	5,802.5
ODP tonnes							
HCFC-22	258.3	229.8	248.3	232.0	237.35	235.02	240.2
HCFC-123	-	0.0	0.1	0.1	0.13	0.12	0.1
HCFC-124	0.7			0.0	-	-	-
HCFC-141b**	155.3	106.7	133.0	126.2	102.31	95.64	129.6
HCFC-142b	18.9	15.8	15.1	17.6	15.79	15.99	16.4
Total (ODP tonnes)	433.2	352.4	396.6	375.9	355.58	346.77	386.3

(*) Estimated consumption.

(**) In addition, 428.5 mt (47.14 ODP tonnes) and 403.45 mt (44.38 ODP tonnes) of HCFC-141b contained in pre-blended polyols were imported in 2011 and 2012, respectively

17. Several issues related to the implementation of the various components associated with the first tranche of the HPMP were discussed and satisfactorily addressed by UNIDO and UNDP. Specifically,

- (a) With regard to the availability of non-HCFC-141b pre-blended polyols, UNDP (as the agency implementing the systems house component) indicated that these systems will be locally available in 2013 and in sufficient quantities to satisfy the demand of all foam enterprises in the country. The technical problem experienced during the storage of methyl formate pre-blended polyols in one enterprise had been addressed; systems houses and downstream foam users will be trained on how to properly handle and store pre-blended polyol systems;
- (b) Both Bayer and Dow Chemical, two foreign-owned systems houses that did not receive assistance from the Multilateral Fund, will supply HFC-245fa-based polyols in addition to several other pre-blended polyols. At a later stage, HFC-24fa will be replaced by HFO;
- (c) With regard to Redachem, the systems house that had a fire and was not producing/selling systems, UNDP reported that no information is available as to how long it will take to re-open the facility. The other systems houses are currently supplying Redachem's downstream foam clients;
- (d) With regard to the Obegi, which at the time of the project preparation was not eligible as it was assumed to be owned by capital from the United Arab Emirates, UNDP confirmed that the systems house is owned fully by Egyptian capital. However, no additional funding will be requested for retrofitting the enterprise to allow for the production of non-HCFC-141b pre-blended polyols; and
- (e) With regard to the new modality of project implementation arrangements (i.e., MOA), UNDP explained that all policies and guidelines of the Fund will be strictly monitored during the conversion of downstream foam enterprises. Issues related to production lines and/or equipment items installed before the cut-off date and foreign ownership component are addressed during downstream foam enterprise workshops where each participating enterprise had to sign a letter of intent.

18. The Secretariat notes that the consumption of HCFCs has been progressively reducing since 2009 and that the import licensing and quota systems are operational, and will enable the Government to continue reducing its consumption by 25 per cent of its baseline by 2018 which is well in advance of the Montreal Protocol's phase out schedule. Conversion of the stand-alone foam projects approved at the 62nd meeting is well advanced with the complete phase-out of HCFC-141b by all enterprises expected in the first half of 2013. It also notes that several non-HCFC-141b pre-blended polyols will be supplied by all systems houses to the local market for their downstream foam users. The activities in the servicing sector proposed for 2013 will allow for further reductions in the consumption of HCFC-22 through the implementation of better service practices, including leakage controls, recovery and recycling and potential cost-effective equipment retrofits.

RECOMMENDATION

19. The Executive Committee may wish to:

- (a) Take note of the progress report on the implementation of the first tranche of stage I of the HCFC phase-out management plan of (HPMP) in Egypt; and

- (b) Approve the second tranche of stage I of the HPMP for Egypt, and the corresponding annual implementation plans, at the amount of US \$2,418,750, consisting of US \$2,000,000, plus agency support costs of US \$150,000 for UNDP, and US \$250,000, plus agency support costs of US \$18,750 for UNIDO.

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