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

**PROJECT PROPOSAL: MALAYSIA**

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)

UNDP

**PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS****Malaysia**

<b>(I) PROJECT TITLE</b>	<b>AGENCY</b>
HCFC phase out plan (Stage I)	UNDP (lead)

<b>(II) LATEST ARTICLE 7 DATA (Annex C Group I)</b>	Year: 2012	736.9 (ODP tonnes)
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<b>(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)</b>								<b>Year: 2012</b>	
Chemical	Aero sol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab Use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123				0.6	0.7				1.3
HCFC-124									
HCFC-141									
HCFC-141b		315.6							315.6
HCFC-142b									
HCFC-21									
HCFC-22				198.6	221.3				419.9
HCFC-225									

<b>(IV) CONSUMPTION DATA (ODP tonnes)</b>			
2009 - 2010 baseline:	515.8	Starting point for sustained aggregate reductions:	515.76
<b>CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)</b>			
Already approved:	103.02	Remaining:	412.8

<b>(V) BUSINESS PLAN</b>		<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Total</b>
UNDP	ODS phase-out (ODP tonnes)	39.0	0.0	5.2	5.2	49.3
	Funding (US \$)	3,900,877	0	515,327	515,327	4,931,531

<b>(VI) PROJECT DATA</b>			<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>Total</b>
Montreal Protocol consumption limits			n/a	n/a	515.8	515.8	464.2	464.2	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	515.8	515.8	464.2	438.4	
Agreed Funding (US\$)	UNDP	Project costs	5,000,000		3,628,723		479,374	479,374	9,587,470
		Support costs	375,000		272,154		35,953	35,953	719,060
Funds approved by ExCom (US\$)	UNDP	Project Costs	5,000,000	0	0	0	0	0	5,000,000
		Support Costs	375,000	0	0	0	0	0	375,000
Total funds requested for approval at this meeting (US\$)	UNDP	Project Costs	0	0	<b>3,628,723</b>	0	0	0	3,628,723
		Support Costs	0	0	<b>272,154</b>	0	0	0	272,154

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

1. On behalf of the Government of Malaysia UNDP, as the designated implementing agency, has submitted to the 71<sup>st</sup> meeting of the Executive Committee a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP)<sup>1</sup> at the amount of US \$3,628,723, plus agency support costs of US \$272,154. The submission includes a progress report on the implementation of the first tranche of the HPMP, together with the tranche implementation plan for 2014 to 2015.

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

2. Stage I includes activities in the polyurethane (PU) foam sector and the refrigeration servicing sector. The results achieved so far are described below.

#### *PU foam sector*

3. Stage I gave priority to convert the 13 largest PU foam manufacturers of discontinuous panels to cyclopentane technology, with an associated phase-out of 94.6 ODP tonnes of HCFC-141b. All 13 enterprises had already signed a performance-based Memorandum of Agreement (MOA) with the Government; of which ten were at various stages of project implementation and three were expected to commence project implementation by November 2013.

4. Stage I also included technical assistance to four local systems houses for customizing low-global-warming potential (GWP) formulations to downstream users. Currently, all four systems houses have signed a MOA with the Government and are at various stages of implementation.

5. Other implemented activities related to the foam sector include the establishment of the import quota system based on the HCFC baseline; the amendment of the existing regulation for controlling use, imports, manufacturing, assembly and installation of products containing HCFCs; and several workshops to disseminate information on new technology and policy changes to the foam sector.

#### *Refrigeration servicing sector*

6. Several activities have been initiated in the refrigeration and air-conditioning servicing sector. A train-the-trainers session was provided on air-conditioning and refrigeration systems design, operation and maintenance. Training was also provided to enforcement officers, including customs and environment officers. At the time of reporting UNDP was undertaking the equipment procurement process for the containment, recovery and reclamation activity. The equipment includes 10 sets of mini reclamation units, accessories and tools, as well as 30 sets of recovery units and tools to be distributed among the refrigerant management centres and the private sector.

### Status of fund disbursement

7. As of 30 September 2013, of the US \$5,000,000 approved for the first tranche, US \$3,764,748 (75 per cent) had been disbursed (Table 1). The balance of US \$1,235,252 (25 per cent) will be disbursed in 2014.

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<sup>1</sup> The HPMP for Malaysia was approved by the Executive Committee at its 65<sup>th</sup> meeting to reduce HCFC consumption by 15 per cent of the baseline by 1 January 2016.

**Table 1: Financial report associated with the first tranche of the HPMP for Malaysia**

Components	Tranche I (US \$)	Disbursement (US \$)	Balance (US \$)
Conversion of 13 foam enterprises to cyclopentane	3,907,247	3,343,785	563,462
Technical assistance to 4 system houses and downstream users	420,000	390,000	30,000
Technical assistance for the servicing sector	359,845	5,208	354,637
Management coordination and monitoring	312,908	25,755	287,153
<b>Total</b>	<b>5,000,000</b>	<b>3,764,748</b>	<b>1,235,252</b>

Annual plans for the second tranche of the HPMP

8. The main activities to be implemented in 2014 and 2015 are described below:
- (a) Continuation of conversions in 13 PU foam manufacturers, and technical assistance for four systems houses;
  - (b) Continuation of the activities started in the refrigeration servicing sector, including refrigeration training of technicians and re-certification, customs training and containment, recovery and reclamation;
  - (c) Initiation of the pilot retrofit/replacement programme for end-users; and
  - (d) Workshops and consultative meetings with the industry, including a seminar for small and medium enterprises to disseminate the results of new low-GWP formulations developed by the systems houses and their use in different applications.

**SECRETARIAT'S COMMENTS AND RECOMMENDATION****COMMENTS**Operational licensing system

9. In line with decision 63/17, confirmation has been received from the Government that an enforceable national system of licensing and quotas for HCFC imports is in place and that the system is capable of ensuring the country's compliance with the Montreal Protocol's HCFC phase-out schedule.

10. Since January 2013 the applications for import permits for HCFCs are processed by the Department of Environment (DOE). Import quotas per substance are allocated to 24 registered importers based on their average imports over the last 3 years. The total import quota established for 2013 is 515.8 ODP tonnes of HCFCs.

HCFC consumption

11. The HCFC baseline for compliance has been established at 515.8 ODP tonnes, based on the actual consumption reported under Article 7 of the Montreal Protocol for 2009 and 2010, as shown in Table 2. The established baseline corresponds to the value in the Agreement between the Government of Malaysia and the Executive Committee; therefore no adjustments to the Agreement are required.

**Table 2. Article 7 HCFC consumption in Malaysia (2007-2012)**

HCFC	2008	2009	2010	2011	2012	Baseline
<b>Metric tonnes (mt)</b>						
HCFC-22	4,471.00	6,255.00	6,455.58	6,167.26	7,635.02	6,355.29
HCFC-141b	1,206.00	1,335.00	1,620.21	1,242.06	2,869.16	1,477.61
HCFC-123	106.00	68.00	45.31	33.70	64.29	56.65
HCFC-141	0.00	0.00	26.75	80.0	0.00	13.38
HCFC-142b	35.56	4.20	20.00	1.80	0.00	12.10
HCFC-21	5.80	37.20	0.00	0.00	0.00	18.60
HCFC-225	3.40	0.67	1.55	1.08	1.18	1.11
<b>TOTAL</b>	<b>5,827.76</b>	<b>7,700.07</b>	<b>8,169.40</b>	<b>7,526.07</b>	<b>10,569.65</b>	<b>7,934.74</b>
<b>ODP tonnes</b>						
HCFC-22	245.91	344.0	355.1	339.19	419.93	349.6
HCFC-141b	132.66	146.9	178.2	136.62	315.61	162.6
HCFC-123	2.12	1.4	0.9	0.67	1.29	1.2
HCFC-141	0.00	0.0	1.9	5.60	0.00	0.9
HCFC-142b	2.31	0.3	1.3	0.12	0.00	0.8
HCFC-21	0.23	1.5	0.0	0.00	0.00	0.7
HCFC-225	0.24	0.1	0.1	0.07	0.08	0.0
<b>TOTAL</b>	<b>383.47</b>	<b>494.0</b>	<b>537.5</b>	<b>482.28</b>	<b>736.91</b>	<b>515.8(*)</b>

(\*) Difference of 0.04 ODP tonnes between the established baseline and the maximum allowable consumption of 515.76 ODP tonnes in the Agreement is due to rounding for the use of one decimal in the baseline.

12. The increase on the HCFC consumption in 2012 as compared to the baseline is due to an increase in the demand for PU foam products in the construction industry, increased demand for exports of panels, and procurement practices adopted by the industry in anticipation of supply constraints and substance controls in Malaysia. However, HCFC demand is expected to decrease from 2014 given the quota system being enforced from 2013; the dissemination of information on low-GWP formulations being developed by the systems houses to be supplied to downstream foam enterprises; and the completion the conversions of foam enterprises to cyclopentane technologies.

#### Issues discussed

13. Upon discussion on the current level of progress achieved in the implementation of the foam sector activities it was determined that out of the 13 enterprises being converted to cyclopentane (with a total consumption of 94.6 ODP tonnes of HCFC-141b), two enterprises (26.2 ODP tonnes) had already received and installed equipment, two enterprises (13.0 ODP tonnes) had completed plant modifications and training and are expecting arrival of equipment in November 2013; seven enterprises (46.2 ODP tonnes) had already started procurement of the equipment and systems required for the conversion between February and October 2013, while only two enterprises (8.8 ODP tonnes) will finalize their implementation plans by November 2013. UNDP also reported that two of the enterprises have already received the equipment and another six would receive it by the end of November 2013.

14. With regard to the systems houses project, following a number of consultations and technical reviews the systems houses opted to use methyl formate. The four systems houses had already developed and tested one formulation based on methyl formate, while two of them had also developed one formulation based on HFO-1233zd. Two of the systems houses had already reported procuring sets of equipment.

15. UNDP summarized that it is expected that eight enterprises and four systems houses will complete implementation in the first half of 2014, and four enterprises and one systems house will complete their projects by the end of 2014 or early 2015. Based on the implementation forecast, UNDP is expected to disburse at least US \$2.15 million to enterprises and systems houses over the next eight months. The Secretariat also noted that the level of disbursement is consistent with the progress reported.

16. The infrastructure established to certify technicians handling CFCs is being extended to continue certifying technicians who handle HCFCs through 26 authorities training centres. The refrigeration management regulations are being modified to include HCFCs and other refrigerants.

17. In response to a query on alternative technologies already available in the market or being promoted in the refrigeration and air-conditioning sector in Malaysia, UNDP indicated that for residential air-conditioning, as most manufacturers are foreign-owned enterprises, the choice of technology would depend on their parent companies. HFC-32 is a prospect and the DOE is planning a pilot project for technicians and end-users to promote adoption of air-conditioners based on this technology. HFC-410A is also available in the market as an interim alternative to replace HCFC-22 systems. For commercial refrigeration, hydrocarbon-based technology, ammonia and HFCs are presently being used besides HCFC-22.

### Conclusion

18. The Secretariat notes that despite the sharp increase in consumption of HCFCs in 2012, the Government of Malaysia has already an operational HCFC import licensing and quota system in place that will ensure compliance with the Montreal Protocol allowable consumption levels. In addition, the Government with the assistance of UNDP is rapidly implementing the investment projects in the foam sector that will reduce the need for HCFC-141b from 2014 on, and will introduce low-GWP alternatives formulations that will be available for the entire foam sector. Training and refrigerant containment activities being implemented in the refrigeration servicing sector are aimed to adapt the sector infrastructure to control the HCFC consumption growth as initially agreed.

### **RECOMMENDATION**

19. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the first tranche of stage I of the HCFC phase-out management plan (HPMP) in Malaysia, and further recommends blanket approval of the second tranche of stage I of the HPMP for Malaysia, and the corresponding 2014-2015 tranche implementation plan, with associated support costs at the funding level shown in the table below:

	<b>Project Title</b>	<b>Project funding (US \$)</b>	<b>Support cost (US \$)</b>	<b>Implementing agency</b>
(a)	HCFC phase-out management plan (stage I second tranche)	3,628,723	272,154	UNDP

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