



**United Nations  
Environment  
Programme**

Distr.  
GENERAL

UNEP/OzL.Pro/ExCom/81/36  
23 May 2018

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Eighty-first Meeting  
Montreal, 18-22 June 2018

**PROJECT PROPOSAL: GUATEMALA**

This document consists of the comments and a recommendation of the Secretariat on the following project proposal:

Phase-out

- HCFC phase-out management plan (stage I, fourth tranche) UNIDO and UNEP

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

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out management plan (stage I)	UNEP, UNIDO (lead)	64 <sup>th</sup>	35 per cent by 2020

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2017	3.36 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2017	
Chemical	Aerosol	Foam	Fire-fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123					0.01				0.01
HCFC-124									
HCFC-141b					0.61				0.61
HCFC-141b in imported pre-blended polyols		0.03							0.03
HCFC-142b									
HCFC-22					2.73				2.73
HCFC-225cb									

(IV) CONSUMPTION DATA (ODP tonnes)			
2009–2010 baseline:	8.3	Starting point for sustained aggregate reductions:	9.6
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	4.3	Remaining:	5.4

(V) BUSINESS PLAN		2018	2019	2020	Total
UNEP	ODS phase-out (ODP tonnes)	0.2	0.0	0.0	0.2
	Funding (US \$)	26,273	0	0	26,273
UNIDO	ODS phase-out (ODP tonnes)	0.4	0.0	0.3	0.7
	Funding (US \$)	46,064	0	35,475	81,539

(VI) PROJECT DATA		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total	
Montreal Protocol consumption limits		n/a	n/a	8.3	8.3	7.5	7.5	7.5	7.5	7.5	5.4	n/a	
Maximum allowable consumption (ODP tonnes)		n/a	n/a	8.3	8.3	7.5	7.5	7.5	7.5	7.5	5.4	n/a	
Agreed funding (US\$)	UNEP*	Project costs	28,250	0	0	30,184*	0	0	23,250	0	0	81,684*	
		Support costs	3,673	0	0	0	3,924*	0	0	3,023	0	0	10,620*
	UNIDO	Project costs	118,087	97,925	0	0	53,775	0	0	42,850	0	33,000	345,637
		Support costs	8,857	7,344	0	0	4,033	0	0	3,214	0	2,475	25,923
Funds approved by ExCom (US \$)	Project costs	146,337	97,925	0	0	83,959*	0	0	0	0	0	328,221*	
	Support costs	12,530	7,344	0	0	7,957*	0	0	0	0	0	27,831*	
Total funds requested for approval at this meeting (US \$)	Project costs								<b>66,100</b>			<b>66,100</b>	
	Support costs								<b>6,237</b>			<b>6,237</b>	

\* Including deduction of the penalty clause of 15 per cent applied to the agreed funding of US \$45,000 and agency support costs of US \$5,850 for the third tranche (decision 75/59(c)).

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

1. On behalf of the Government of Guatemala, UNIDO, as lead implementing agency, has submitted a request for funding for the fourth tranche of stage I of the HCFC phase-out management plan (HPMP), at a total cost of US \$72,337, consisting of US \$42,850, plus agency support costs of US \$3,214 for UNIDO, and US \$23,250, plus agency support costs of US \$3,023 for UNEP.<sup>1</sup> The submission includes a progress report on the implementation of the third tranche and the tranche implementation plan for 2018 to 2020.

### Report on HCFC consumption

2. The Government of Guatemala reported consumption of 3.36 ODP tonnes of HCFC in 2017, which is 59.5 per cent below the HCFC baseline for compliance. The HCFC consumption for the period 2013-2017 is shown in Table 1.

**Table 1. HCFC consumption in Guatemala (2013–2017 Article 7 data)**

HCFC	2013	2014	2015	2016	2017	Baseline
<b>Metric tonnes</b>						
HCFC-22	134.89	64.65	61.80	66.97	49.66	126.9
HCFC-123	0.05	0.05	0.00	0.45	0.73	0.1
HCFC-124	0.87	0.43	0.49	0.00	0.00	5.2
HCFC-141b	21.79	10.76	9.89	17.29	5.53	9.8
HCFC-142b	0.00	0.00	0.00	0.00	0.00	1.7
<b>Total (metric tonnes)</b>	<b>157.6</b>	<b>75.89</b>	<b>72.18</b>	<b>84.71</b>	<b>55.92</b>	<b>143.8</b>
HCFC-141b in imported pre-blended polyols	0.00	17.63	13.81	7.74	0.27	12.73*
<b>ODP tonnes</b>						
HCFC-22	7.42	3.55	3.40	3.68	2.73	7.0
HCFC-123	0.00	0.00	0.00	0.01	0.01	0.0
HCFC-124	0.02	0.01	0.01	0.00	0.00	0.1
HCFC-141b	2.40	1.18	1.09	1.90	0.61	1.1
HCFC-142b	0.00	0.00	0.00	0.00	0.00	0.1
<b>Total (ODP tonnes)</b>	<b>9.84</b>	<b>4.74</b>	<b>4.50</b>	<b>5.59</b>	<b>3.36</b>	<b>8.3</b>
HCFC-141b in imported pre-blended polyols	0.00	1.94	1.52	0.85	0.03	1.4*

\*Average consumption between 2007 and 2009.

3. During the past years, HCFC consumption has been maintained below the established national quotas. In 2017, there was a 34 per cent reduction from the consumption in 2016 because only four out of eight importers imported HCFCs owing to a tax on imports. On the basis of information received from importers, this trend is expected to continue.

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

4. The Government of Guatemala reported HCFC sector consumption data under the 2017 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

<sup>1</sup> As per the letter of 10 April 2018, from the Ministry of Environment and Natural Resources of Guatemala, to UNIDO.

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

*Legal framework*

5. Guatemala has continued to implement its HCFC licensing and quota system for imports and exports and collect Customs data on HCFC trade. This data is used to assess HCFC consumption and prevent illegal trade. The manufacturing and imports of equipment and products containing HCFCs has been banned in Guatemala since 2017.

6. Thirty Customs officers have been trained in issues related to control of ODS, including the use of refrigerant blend identifiers, and a refrigerant identifier has been purchased for the Customs Department. The National Ozone Officer (NOO) and several Customs officers have also participated in two regional workshops on the prevention of illegal trade.

7. A regional expert has been hired to guide Guatemala in the development of standards related to flammable refrigerants.

*Foam manufacturing sector*

8. In 2013, the domestic refrigerator producer, Fogel, completed conversion of the insulation foam in domestic and commercial refrigeration equipment, replacing 13.10 metric tonnes (mt) (1.44 ODP tonnes) of HCFC-141b contained in imported pre-blended polyols with cyclopentane.

9. The Government is currently in the process of establishing a ban on the import of HCFC-141b in bulk and in pre-blended polyols.<sup>2</sup> The draft text will be presented for public consultation in the second half of 2018, and the ban is expected to be in place on 1 January 2019.

*Refrigeration servicing sector*

10. In 2016, a refrigerant reclaiming unit was purchased and installed in a training centre in Guatemala City. It has reclaimed 500 kg of HCFC-22 since then. Refrigerant recovery machines and servicing toolkits, including vacuum pumps, cylinders and hand-held electronic leak detectors, have also been purchased and distributed to five training centres across the country, where training in tool use and good refrigeration practices has been carried out. So far, eight centres have received tools.

11. The technician training programme has continued to be implemented in cooperation with the beneficiary technical training institutes. So far, some 750 technicians have been trained in good servicing practices, including recovery and recycling practices and leak detection. Training is now also oriented towards the use of hydrocarbons (HC) as refrigerants and the servicing of new HC-based equipment, given that there is such HC-based equipment on the market.

*Project implementation and monitoring unit*

12. Monitoring and follow-up of project activities is undertaken by national experts under the supervision of the NOO.

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<sup>2</sup> In approving the second tranche of the HPMP, the Executive Committee encouraged the Government of Guatemala to consider issuing a ban on the import of HCFC-141b in bulk and contained in imported pre-blended polyols prior to completion of stage I, and requested UNIDO to report thereon to the Executive Committee when submitting subsequent tranche funding requests (decision 68/25(b) and (c)).

Level of fund disbursement

13. As of March 2018, of the US \$328,221 approved so far, US \$269,914 had been disbursed (US \$249,136 for UNIDO and US \$20,778 for UNEP) as shown in Table 2. The balance of US \$58,307 will be disbursed in 2018 and 2019.

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

Tranche		UNIDO	UNEP	Total	Disbursement rate (%)
First tranche	Approved	118,087	28,250	146,337	93
	Disbursed	118,087	17,793	135,880	
Second tranche	Approved	97,925	0	97,925	99
	Disbursed	97,339	0	97,339	
Third tranche	Approved	53,775	30,184*	83,959	40
	Disbursed	30,710	2,985	33,695	
<b>Total</b>	<b>Approved</b>	<b>269,787</b>	<b>58,434</b>	<b>328,221</b>	<b>82</b>
	<b>Disbursed</b>	<b>249,136</b>	<b>20,778</b>	<b>269,914</b>	

\*Including the 15 per cent penalty clause applied to the agreed funding of US \$45,000 for the third tranche (decision 75/59(c)).

Implementation plan for the fourth tranche of the HPMP

14. The following activities will be implemented between July 2018 and June 2020:

- (a) Technical assistance for the control of trade in HCFC-based substances and equipment: training of 50 additional Customs officers (making a total of 150 so far); procurement and distribution of three refrigerant identifiers for the Customs Department; development of a new module on ODS control to be included in the regular training programmes of Customs officers in the country; participation in the electronic exchange information on ODS trade (i-PIC); and establishment of standards for refrigerant handling (UNEP) (US \$23,250);
- (b) Technical assistance in reducing the use of HCFC: continued implementation of the refrigeration training and certification programme through the Technical Institute for Training and Productivity (INTECAP) and other private training centres; training and certification of 100 additional technicians; further formalization of the technician certification system by involving relevant institutions; purchase of servicing toolkits to strengthen additional training centres; upgrade of the reclaiming centre and feasibility analysis with regard to a second reclaiming unit; and implementation of the end-user programme (for supermarkets, melon producers and service providers) to promote refrigerant containment and the saving of electricity consumption through leak reduction and good refrigeration practices (UNIDO) (US \$42,850); and
- (c) HPMP implementation, monitoring and control: coordination and monitoring of all activities of the HPMP (UNIDO) (no funds requested).

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

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

##### *Legal framework*

15. The Government of Guatemala has already issued the HCFC import quota for 2018 at 94.4 mt, which is lower than the Montreal Protocol control targets. As of 2019, no import quotas for HCFC-141b will be allocated.

##### *Refrigeration servicing sector*

16. Providing clarification of the objectives and activities included in the planned end-user programme, UNIDO has explained that it is not related to the retrofitting or conversion of HCFC-based systems; rather it aims to promote refrigerant containment in HCFC-based equipment, leak reductions and good practices, and to demonstrate the costs associated with poor servicing practices, including the venting of refrigerant. It will analyse the operation of the systems before and after application of the good practices plan with regard to refrigerant consumption, leaks, energy consumption, and refrigerant quality. A pilot plan will be implemented in two or three end-users in different sectors. While no investments are planned, it is expected that the end-users will assume the cost of applying the good practices associated with the programme.

17. Concerning the status and characteristics of the certification system, UNIDO has explained that certified technicians receive an "environmental licence" on good refrigeration practices, which is provided at a low cost on the basis of a ministerial resolution. Technicians who have obtained this licence are registered in a database of the Ministry of the Environment and Natural Resources. However, a formal certification scheme for refrigeration and air-conditioning (RAC) technicians will be established, with the participation of the national certification body and the national association of technicians (ASFRIGUA). This will include: the revision of regional and international standards on certification systems for RAC technicians; definition of a national system allowing RAC technicians to perform their work only on the basis of proven competence; the setting-up of the certification system with selected certifying and accrediting institutions; the training of evaluators; and the evaluation of a pilot group of 100 technicians. Once the system is operating, expected in 2019, there are also plans to restrict the sales of refrigerant to the certified technicians, as part of the fourth tranche of the HPMP.

18. With regard to the status of introduction of alternative refrigerants and equipment with low global-warming potential (GWP), and their affordability, UNIDO has stated that, in Guatemala, there are already HC-based commercial refrigerators manufactured by Fogel. As in other countries in the region, HFC-134a is the main refrigerant in the market: air-conditioning systems use R-410A and R-404A; some industrial applications also use R-404A, and there are R-600a-based domestic refrigerators and R-290-commercial refrigerators available on the market. So far, no conditions relating to low-GWP have been imposed.

19. Concerning the activities under way to ensure that Customs and technician training can continue to be provided in a self-sustained manner by the relevant institutions once the HPMP has been completed, UNIDO has mentioned the creation of a strong national board of experts, including the national ozone unit (NOU), ASFRIGUA, refrigeration training institutes, universities and the national steering committee. Secondly, the renewed, mandatory technician certification scheme aims to attract the less knowledgeable technicians and help them acquire basic skills, thereby ensuring that in the future only certified technicians provide servicing. To complement this, a variety of tailored training sessions will be offered by the training centres. The NOU is also developing, with the Customs Department, an annual work plan to prevent illegal trade in ODS, including a module on the controls on HFCs that will be included in the regular training programme of Customs officers.

## Conclusion

20. For the last three years, Guatemala has been in compliance with the Montreal Protocol and its Agreement with the Executive Committee, with significant reductions in HCFC consumption, especially in 2017. Guatemala has been improving its ODS-related legal system and has banned the manufacture and import of equipment and products containing HCFCs since 2017. The largest HCFC-based manufacturing enterprise has successfully converted to a low-GWP alternative and a ban on the import of HCFC-141b in bulk and in pre-blended polyols is expected to be in place on 1 January 2019. The activities in the refrigeration servicing sector have continued with the distribution of equipment to training centres and additional training to technicians. The level of disbursement is 82 per cent of the funds approved so far. The planned activities under the fourth tranche, including implementation of a formal competency-based RAC technician certification system and the end-user programme based on refrigerant containment and good practices, will ensure long-term sustainability of stage I of the HPMP.

## **RECOMMENDATION**

21. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the third tranche of stage I of the HCFC phase-out management plan of (HPMP) for Guatemala, and further recommends blanket approval of the fourth tranche of stage I of the HPMP for Guatemala, and the corresponding 2018–2020 tranche implementation plan, at the funding levels shown in the table below:

	<b>Project title</b>	<b>Project funding (US \$)</b>	<b>Support costs (US \$)</b>	<b>Implementing agency</b>
(a)	HCFC phase-out management plan (stage I, fourth tranche)	42,850	3,214	UNIDO
(b)	HCFC phase-out management plan (stage I, fourth tranche)	23,250	3,023	UNEP