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

PROJECT PROPOSAL: MADAGASCAR

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

Phase-out

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

*re-issued for technical reasons on 25 May 2018

Pre-session documents of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol are without prejudice to any decision that the Executive Committee might take following issuance of the document.

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Madagascar

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (Stage I)	UNEP (lead), UNIDO	62 nd	35% by 2020

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2017	10.73 (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-22					10.73				10.73

(IV) CONSUMPTION DATA (ODP tonnes)				
2009 - 2010 baseline:		24.90	Starting point for sustained aggregate reductions:	17.10
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)				
Already approved:		6.00	Remaining:	11.10

(V) BUSINESS PLAN		2016	2017	2018	2019	2020	Total
UNEP	ODS phase-out (ODP tonnes)	0.6	0	0.5	0	0.6	1.7
	Funding (US \$)	67,800	0	49,720	0	63,280	180,800
UNIDO	ODS phase-out (ODP tonnes)	1.3	0	0	0	0	1.3
	Funding (US \$)	129,000	0	0	0	0	129,000

(VI) PROJECT DATA			2010-2012	2013	2014	2015	2016	2017	2018	2019	2020	Total	
Montreal Protocol consumption limits			n/a	24.9	24.9	22.41	22.41	22.41	22.41	22.41	16.18	n/a	
Maximum allowable consumption (ODP tonnes)			n/a	17.1	17.1	15.4	15.4	15.4	15.4	15.4	11.1	n/a	
Agreed funding (US\$)	UNEP	Project costs	70,000	70,000	0	0	60,000	0	44,000	0	56,000	300,000	
		Support costs	9,100	9,100	0	0	7,800	0	5,720	0	7,280	39,000	
	UNIDO	Project costs	140,000	0	0	0	120,000	0	0	0	0	0	260,000
		Support costs	10,500	0	0	0	9,000	0	0	0	0	0	19,500
Funds approved by ExCom (US\$)	Project costs		210,000	70,000	0	0	180,000	0	0	0	0	460,000	
	Support costs		19,600	9,100	0	0	16,800	0	0	0	0	45,500	
Total funds requested for approval at this meeting (US\$)	Project costs								44,000			44,000	
	Support costs								5,720			5,720	

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Madagascar, UNEP as the 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 the amount of US \$44,000, plus agency support costs of US \$5,720 for UNEP only.¹ 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

HCFC consumption

2. The Government of Madagascar reported HCFC consumption of 10.73 ODP tonnes in 2017, which is 57 per cent below the HCFC baseline for compliance, and 37.2 per cent below the starting point for sustained aggregate reductions. The 2013-2017 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Madagascar (2013-2017 Article 7 data)

HCFC-22	2013	2014	2015	2016	2017	Baseline
Metric tonnes	290.00	278.00	255.00	215.00	195.00	452.72
ODP tonnes	15.95	15.29	14.03	11.83	10.73	24.9

3. HCFC-22, which is used in the servicing and maintenance of refrigeration and air-conditioning equipment, has been decreasing since 2013 as the country implements its phase-out plan, and non-HCFC-based equipment has started being imported into the country.

Country programme (CP) implementation report

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

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

Legal framework

5. Madagascar has an effective licensing and quota system that ensures the country's compliance with its HCFC phase-out schedule. The Government implements its laws and regulations to control the entry, sale and resale, and use of refrigerants and refrigerant equipment. It has banned the use of CFCs, halons and methyl bromide. The country has an operational online import license system – the MIDAC module (Ministry, Department and Control Agency) – which provides for the electronic issuance of import authorizations for HCFCs and HCFC-based equipment. The General Directorate of Customs enforces customs legislation and the collection of customs duties and taxes on ODS imports.

Refrigeration servicing sector

6. The main activities carried out include:

- (a) Three national workshops for 75 customs officers and environmental inspectors on identification and control of HCFCs as well as on monitoring of the licensing and quota system;

¹ As per the letter of 3 April 2018 from the Ministry of Environment and Forest of Madagascar to the Secretariat.

- (b) Three training workshops for 90 refrigeration and service technicians on good refrigeration practices, and safe handling of hydrocarbon refrigerants and standards; and
- (c) Two introductory workshops to representatives of the national refrigeration association (*Union des Frigoristes de Madagascar* - UFM) on the incentive programme to convert HCFC-22-based air conditioners to R-290 units, and to three end-users: Cotona, a cotton apparels production company, which had 19 HCFC-22-based units; Hotel AR, which had 12 HCFC-22 air-conditioners; and Centre Hospitalier de Référence Régionale, a regional public clinic, which had about 30 HCFC-22-based equipment.

Project implementation and monitoring unit (PMU)

7. The National Ozone Unit (NOU) is responsible for coordinating and managing the HPMP, including the preparation and implementation of national legislation to control and manage ODS imports, exports and consumption. The NOU recruited two consultants, refrigeration and customs experts, to assist in the monitoring of the implementation of all HPMP activities.

Level of fund disbursement

8. As of April 2018, of the US \$460,000 approved so far, a total of US \$348,399 had been disbursed (US \$190,000 for UNEP and US \$158,399 for UNIDO) as shown in Table 2. The balance of US \$111,601 will be disbursed in 2018-2020.

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

Tranche		UNEP	UNIDO	Total	Disbursement rate (%)
First tranche	Approved	70,000	140,000	210,000	100
	Disbursed	70,000	139,435	209,435	
Second tranche	Approved	70,000	0	70,000	100
	Disbursed	70,000	0	70,000	
Third tranche	Approved	60,000	120,000	180,000	38
	Disbursed	50,000	18,964	68,964	
Total	Approved	200,000	260,000	460,000	76
	Disbursed	190,000	158,399	348,399	

Implementation plan for the fourth tranche of the HPMP

9. The following activities will be implemented between July 2018 and December 2020:
- (a) Three refrigeration workshops for 50 customs officers and 10 environmental inspectors on the control and identification of ODS and ODS-based equipment (UNEP) (US \$20,000);
 - (b) Four workshops for 100 refrigeration and air-conditioning technicians on the implementation of good practices, recovery and recycling techniques as well as on the safe handling of hydrocarbon alternatives (UNEP) (US \$20,000);
 - (c) Support to the incentive programme: purchase of equipment to replace 100 HCFC-based air-conditioners to hydrocarbons; recruitment of international and national experts; and training on installation and servicing of hydrocarbon air-conditioners (UNIDO) (funds from previous tranches); and
 - (d) Coordination and management of the HPMP implementation and regular collection of data with the support of consultants and staff travel (UNEP) (US \$4,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

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

Legal framework

10. The Government of Madagascar has issued the 2018 HCFC import quota of 10.45 ODP tonnes, which is lower than the maximum allowable consumption targets in the Agreement.

Refrigeration servicing sector

11. The Secretariat followed up on outstanding activities with UNEP, which indicated that the training of 30 more refrigeration technicians on good practices in refrigeration and safe handling of hydrocarbon alternatives and standards, and the training of 25 more enforcement officers would be completed by June 2018 using the tranche's remaining balance of US \$10,000.

12. UNIDO, through UNEP, explained that the incentive programme to replace HCFC-22-based air-conditioners with R-290 was delayed because of the pneumonic and bubonic plague outbreak in 2017 and limited communication with the NOU. The situation has since improved, and the activity was now underway. Equipment procurement was due to start in the second quarter of 2018, with delivery expected by the end of the third quarter following which further technical training would be provided for technicians. Maintenance managers of all the three end-users already identified have expressed interest in replacing HCFC-22 units with R-290 units.

13. While the country had originally planned the incentive programme towards retrofitting HCFC-22-based air-conditioners to alternative refrigerants based on a 50 per cent subsidy, the revised strategy was focused on full replacement of HCFC-22 units because of safety concerns associated with retrofitting. UNIDO explained that all retrofit projects to a flammable refrigerant were suspended and replaced with new activities to completely replace HCFC-22 air-conditioners with R-290 air-conditioners.

14. The country has shifted towards the use of HFCs and HFC blends such as HFC-134a, R-404A, R-407C, R-410A and R-507A. For example, in the fisheries sector, which at 39 per cent is the largest single user of HCFC-22 annually, also uses other refrigerants in the market, with about three per cent of annual consumption comprised of HFC-134a and R-404A. Alternatives such as R-717 (ammonia) are also in use, particularly by major food processing industries that require high refrigeration capacity. Hydrocarbon-based refrigerants such as R-290 and R-600a had also penetrated the market, but on a smaller scale compared to the HFCs and HFC blends.

15. UNEP indicated that the major obstacles for the introduction of low global warming potential and energy efficient air-conditioning and refrigeration equipment were their higher costs and availability on the local market, and the limited number of experienced technicians to service and maintain the equipment. UNEP expected the rate of adoption to increase with the strengthening of the capacity of the technicians in the use of hydrocarbon technologies. A training needs assessment for the servicing sector would be undertaken and its findings would be used for further planning of the activities related to the use of HFCs and low-GWP alternatives.

Conclusion

16. Implementation of stage I of the HPMP is on-going. The country is in compliance with the Montreal Protocol and its Agreement with the Executive Committee. The licensing and quota system is operational,

and is contributing to the country's HCFC phase-out schedule. Due to safety related issues, the country decided to completely replace its original plan to retrofit HCFC-22-based equipment with flammable refrigerants to an incentive programme focused on full replacement of HCFC-22 air-conditioners with R-290 air-conditioners. The level of disbursement is more than 75 per cent of the total funding so far approved. The activities implemented so far have contributed to strengthening the servicing sector, leading the country to progressively introduce viable alternative technologies. Activities to be implemented during the fourth tranche will ensure the long-term sustainability of the activities proposed in stage I of the HPMP.

RECOMMENDATION

17. 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 (HPMP) for Madagascar, and further recommends blanket approval of the fourth tranche of stage I of the HPMP for Madagascar, and the corresponding 2018-2020 tranche implementation plan, at the funding level shown in the table below, on the understanding that Madagascar has consumption in the servicing sector only; and that the financial incentive scheme would enhance the sustainability of the training of servicing technicians, and that end-users would provide co-financing to participate in the scheme.

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, fourth tranche)	44,000	5,720	UNEP