



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/95/82
19 November 2024

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-fifth Meeting
Montreal, 4-8 December 2024
Item 9(d) of the provisional agenda¹

PROJECT PROPOSAL: ZIMBABWE

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

Phase-down

- | | | |
|---|---------------|--------------------------|
| • Kigali HFC implementation plan (stage I, first tranche) | UNEP and UNDP | Individual consideration |
|---|---------------|--------------------------|

¹ UNEP/OzL.Pro/ExCom/95/1

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

Zimbabwe

PROJECT TITLE	AGENCY
Kigali HFC implementation plan (stage I)	UNEP (lead), UNDP

LATEST ARTICLE 7 DATA (Annex F)	Year: 2023	378.40 mt	842,264 CO ₂ -eq tonnes
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SECTORAL HFC CONSUMPTION DATA (CO ₂ -eq tonnes) AND ACTIVITIES									
	Aerosol	Foam	Fire-fighting	AC and refrigeration			Servicing	Solvent	Other
				Manufacturing					
				Refrigeration	AC	Other			
Latest CP report (2023)			4,444	35,049			802,771		
KIP stage I activities as agreed (Y/N)			N	N			Y		

AVERAGE 2020-2022 HFC CONSUMPTION IN SERVICING	345.77 mt	800,084 CO ₂ -eq tonnes
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BASELINE CONSUMPTION DATA (CO ₂ -eq tonnes)	2020	2021	2022	Average 2020-2022
HFC annual consumption	1,009,387	733,188	795,792	846,122
HCFC baseline (65%)				364,502
HFC baseline				1,210,624

HFC CONSUMPTION ELIGIBLE FOR FUNDING	
Starting point for sustained aggregate reductions	TBD
Previously approved HFC phase-down investment projects	Yes
Aggregate reductions from previously approved projects (CO ₂ -eq tonnes)	20,735

PROJECT DATA AS AGREED			2024*	2025	2026	2027	2028	2029	Total
Consumption (CO ₂ -eq tonnes)	Montreal Protocol limits		1,210,624	1,210,624	1,210,624	1,210,624	1,210,624	1,089,561	n/a
	Maximum allowable		945,654	945,654	945,654	945,654	892,463	761,510	n/a
	Maximum allowable (%)		78	78	78	78	74	63	n/a
Amounts recommended in principle (US \$)	UNEP	Project costs	151,500	0	0	106,500	0	54,000	312,000
		Support costs	19,695	0	0	13,845	0	7,020	40,560
	UNDP	Project costs	90,000	0	0	0	0	30,000	120,000
		Support costs	11,700	0	0	0	0	3,900	15,600
	Total project costs		241,500	0	0	106,500	0	84,000	432,000
	Total support costs		31,395	0	0	13,845	0	10,920	56,160
	Total funds		272,895	0	0	120,345	0	94,920	488,160

* Recommended for approval at the present meeting

Reduction from remaining consumption eligible for funding in CO ₂ -eq tonnes	469,849*
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* Includes the reduction of 20,735 CO₂-eq tonnes from previously approved projects

Secretariat's recommendation:	Individual consideration
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PROJECT DESCRIPTION

1. The present document contains the following sections:
 - I. Summary of the proposal as submitted
 - II. Background: Implementation status of the country's HCFC phase-out management plan and previous HFC-related projects
 - III. HFC consumption: Overview of the country's HFC consumption levels, trends, and sectoral uses
 - IV. Stage I of the Kigali HFC implementation plan, as submitted: Overarching strategy and plan of implementation for the first tranche
 - V. Secretariat's comments, including the agreed cost of activities
 - VI. Recommendation

I. Summary of the proposal as submitted

2. On behalf of the Government of Zimbabwe, UNEP as the lead implementing agency has submitted a request for stage I of the Kigali HFC implementation plan (KIP), at a total cost of US \$406,800, consisting of US \$240,000, plus agency support costs of US \$31,200 for UNEP and US \$120,000, plus agency support costs of US \$15,600 for UNDP, as originally submitted.²

3. The implementation of stage I of the KIP will assist the Government of Zimbabwe in meeting the target of 10 per cent reduction from its HFC baseline consumption by 1 January 2029.

4. The first tranche of stage I of the KIP being requested at this meeting amounts to US \$238,430, consisting of US \$121,000, plus agency support costs of US \$15,730 for UNEP and US \$90,000, plus agency support costs of US \$11,700 for UNDP, as originally submitted, for the period of January 2025 to December 2027.

II. Background

Status of implementation of the HCFC phase-out management plan

5. Table 1 presents information on the HCFC phase-out management plan (HPMP) in Zimbabwe as of November 2024.

Table 1. HPMP implementation status for Zimbabwe

	Stage I	Stage II
Meetings when HPMP was approved/updated	65 th /71 st	86 th /92 nd
Reduction from baseline	35% by 2020	100% by 2030
Total project cost (US \$)	1,038,818	1,160,000
Date of completion (actual/planned)	31 December 2021	31 December 2031

² As per the letter of 14 August 2024 from the Ministry of Environment, Climate and Wildlife of Zimbabwe to the Secretariat.

Status of implementation of previous HFC-related activities

6. Table 2 presents an overview of activities implemented in Zimbabwe in the context of the Kigali Amendment that have been funded by the Multilateral Fund.

Table 2. Previously approved HFC-related activities in Zimbabwe

Approval meeting	Project title	Implementing agency	Cost (US \$)	Date of completion
74 th	Survey of ODS alternatives	UNEP	70,000	Aug 2017
80 th	Enabling activities for HFC phase-down	UNEP	150,000	Dec 2019
82 nd	Conversion from HFC-134a to isobutane in the manufacture of domestic refrigerators at Capri	UNDP/France	426,954	Jun 2025*

* The project was originally expected to be completed in June 2023.

7. The conversion of the domestic refrigerator manufacturing line at Capri has been delayed due to the COVID-19 pandemic and the delayed delivery of equipment. All civil and structural works have been completed for the modification of the two manufacturing lines for freezers and refrigerators, respectively, including storage areas for the R-600a. Equipment was procured from Galileo, Italy and delivered in December 2023. With the assistance of the international expert from Galileo, equipment installation and commissioning have been planned; and installation of pipes is underway. The remaining activities to be implemented include training of personnel on safety aspects and safety audits. It is expected that the project will be completed by March 2025. A request for extension of project completion to June 2025 is being requested.

III. HFC consumption overviewHFC consumption levels

8. Zimbabwe only imports HFCs for use in the refrigeration manufacturing, refrigeration and air-conditioning (RAC) servicing, and firefighting sectors. The most consumed substances in 2023 were R-404A (37.0 per cent of total HFC consumption in CO₂-equivalent (CO₂-eq) tonnes), R-410A (28.7 per cent), and HFC-134a (18.7 per cent), followed by other HFCs (15.6 per cent). Table 3 presents the country's HFC consumption as reported to the Ozone Secretariat under Article 7 of the Montreal Protocol.

Table 3. HFC consumption in Zimbabwe (2019–2023 Article 7 data)

HFC	GWP	2019	2020	2021	2022	2023
Metric tonnes (mt)						
HFC-32	675	0.20	0.34	2.18	22.41	31.54
HFC-125	3,500	0.00	0.57	0.57	0.00	0.00
HFC-134a	1,430	293.07	116.37	122.25	110.04	109.97
HFC-227ea	3,220	2.50	0.00	0.23	20.25	1.38
R-404A	3,922	79.04	84.01	62.15	58.89	79.53
R-407C	1,774	36.60	66.93	32.68	27.50	24.51
R-410A	2,088	91.57	96.20	107.35	96.34	115.94
R-507A	3,985	7.78	48.12	7.12	19.39	15.53
R-508B	6,808	0.01	0.00	0.00	0.00	0.00
Total (mt)		510.77	412.54	334.53	354.82	378.40
CO₂-eq tonnes						
HFC-32	675	135	230	1,472	15,127	21,290
HFC-125	3,500	0	1,995	1,995	0	0
HFC-134a	1,430	419,090	166,409	174,818	157,357	157,257
HFC-227ea	3,220	8,050	0	741	65,205	4,444
R-404A	3,922	309,963	329,454	243,727	230,943	311,885
R-407C	1,774	64,923	118,724	57,969	48,781	43,477

HFC	GWP	2019	2020	2021	2022	2023
R-410A	2,088	191,152	200,818	224,093	201,110	242,025
R-507A	3,985	31,003	191,758	28,373	77,269	61,887
R-508B	6,808	68	0	0	0	0
Total (CO₂-eq tonnes)		1,024,385	1,009,387	733,188	795,792	842,264

Established HFC baseline

9. The Government of Zimbabwe reported the Article 7 data for 2020-2022. The country's HFC consumption baseline was established at 1,210,624 CO₂-eq tonnes by adding 65 per cent of its HCFC baseline (expressed in CO₂-eq tonnes) to its average HFC consumption in 2020-2022, as shown in table 4.

Table 4. HFC baseline calculation for Zimbabwe (CO₂-eq tonnes)

Baseline calculation components	2020	2021	2022
HFC annual consumption	1,009,387	733,188	795,792
HFC average consumption in 2020-2022			846,122
HCFC baseline (65%)			364,502
HFC baseline			1,210,624

Country programme implementation report

10. The sectoral HFC consumption data provided by the Government of Zimbabwe in its country programme (CP) implementation report for 2023 is consistent with the data reported under Article 7 of the Montreal Protocol.

HFC consumption trends

11. HFC consumption decreased by 35 per cent from 2019 to 2021 due to the COVID-19 pandemic and economic slowdown, as well as potential stockpiling in 2019 due to anticipated controls on HFCs. However, HFC consumption has been increasing in 2022 and 2023, and this trend is expected to continue under a business-as-usual scenario with ongoing economic development.

HFC consumption by sector

12. HFCs are mainly used for RAC servicing (95 per cent in mt and CO₂-eq tonnes) with the remaining amounts used in domestic and commercial refrigeration equipment manufacturing (4.8 per cent in mt and 4.2 per cent in CO₂-eq tonnes) and in firefighting equipment servicing (less than 1 per cent).

13. In the RAC servicing sector, HFCs are used in commercial, industrial and transport refrigeration (37.7 per cent in mt and 51.4 per cent in CO₂-eq tonnes), followed by residential and commercial air-conditioning (AC) and chillers (45.5 per cent in mt and 36.4 per cent in CO₂-eq tonnes), residential refrigeration equipment servicing (8.6 per cent in mt and 5.5 per cent in CO₂-eq tonnes), and mobile air-conditioning (MAC) (2.4 per cent in mt and 1.5 per cent in CO₂-eq tonnes), as shown in tables 5 and 6.

Table 5. HFC consumption in Zimbabwe by sector in mt (2023)

Sectors	HFC-134a	HFC-32	HFC-227ea	R-404A	R-407C	R-410A	R-507A	Total	Share of total (%)
Manufacturing and assembly									
Domestic refrigeration	9.00	0.00	0.00	0.00	0.00	0.00	0.00	9.00	2.4
Commercial refrigeration	5.50	0.00	0.00	3.65	0.00	0.00	0.00	9.15	2.4
MAC	2.75	0.00	0.00	0.00	0.00	0.00	0.00	2.75	0.7
Subtotal for manufacturing/assembly	17.25	0.00	0.00	3.65	0.00	0.00	0.00	20.90	5.5

Sectors	HFC-134a	HFC-32	HFC-227ea	R-404A	R-407C	R-410A	R-507A	Total	Share of total (%)
Refrigeration and AC servicing									
Domestic refrigeration	32.40	0.00	0.00	0.00	0.00	0.00	0.00	32.40	8.6
Commercial refrigeration	Stand-alone units	13.35	0.00	0.00	3.90	0.00	0.00	17.25	4.6
	Condenser units (simplex)	28.95	0.00	0.00	38.18	0.00	0.00	75.80	20.0
	Centralized systems	0.00	0.00	0.00	22.60	0.00	0.00	27.93	7.4
Industrial refrigeration	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.53	0.4
Transport refrigeration	8.90	0.00	0.00	11.2	0.00	0.00	0.00	20.10	5.3
Residential AC	0.00	10.13	0.00	0.00	0.00	28.84	0.00	38.97	10.3
Packaged AC units	0.00	0.00	0.00	0.00	0.00	24.70	0.00	24.70	6.5
Chiller AC units	0.00	0.00	0.00	0.00	15.00	30.00	0.00	45.00	11.9
Commercial AC	0.00	21.41	0.00	0.00	9.51	32.40	0.00	63.32	16.7
MAC	9.12	0.00	0.00	0.00	0.00	0.00	0.00	9.12	2.4
Subtotal for servicing	92.72	31.54	0.00	75.88	24.51	115.94	15.53	356.12	94.1
Firefighting servicing	0.00	0.00	1.38	0.00	0.00	0.00	0.00	1.38	0.4
Total	109.97	31.54	1.38	79.53	24.51	115.94	15.53	378.40	100.0

Table 6. HFC consumption in Zimbabwe by sector in CO₂-eq tonnes (2023)

Sectors	HFC-134a	HFC-32	HFC-227ea	R-404A	R-407C	R-410A	R-507A	Total	Share of total (%)
Manufacturing and assembly									
Domestic refrigeration	12,870	0	0	0	0	0	0	12,870	1.5
Commercial refrigeration	7,865	0	0	14,314	0	0	0	22,179	2.6
MAC	3,933	0	0	0	0	0	0	3,933	0.5
Subtotal for manufacturing/assembly	24,668	0	0	14,314	0	0	0	38,981	4.6
Refrigeration and AC servicing									
Domestic refrigeration	46,332	0	0	0	0	0	0	46,332	5.5
Commercial refrigeration	Stand-alone units	19,091	0	0	15,294	0	0	34,385	4.1
	Condenser units (simplex)	41,399	0	0	149,727	0	0	225,675	26.8
	Centralized systems	0	0	0	88,628	0	0	21,240	13.0
Industrial refrigeration	0	0	0	0	0	0	6,097	6,097	0.7
Transport refrigeration	12,727	0	0	43,922	0	0	0	56,649	6.7
Residential AC	0	6,838	0	0	0	60,204	0	67,041	8.0
Packaged AC units	0	0	0	0	0	51,561	0	51,561	6.1
Chiller AC units	0	0	0	0	26,608	62,625	0	89,233	10.6
Commercial AC	0	14,452	0	0	16,869	67,635	0	98,956	11.7
MAC	13,042	0	0	0	0	0	0	13,042	1.5
Subtotal for servicing	132,590	21,290	0	297,571	43,477	242,025	61,887	798,839	94.8
Firefighting servicing	0	0	4,444	0	0	0	0	4,444	0.5
Total	157,257	21,290	4,444	311,885	43,477	242,025	61,887	842,264	100.0

Manufacturing and assembly sectors

14. The manufacturing sector in Zimbabwe consists of enterprises that manufacture domestic and commercial refrigeration equipment. Most of the refrigeration manufacturing enterprises in Zimbabwe are from the informal sector and with low HFC consumption, thereby making them ineligible for funding due to the cost threshold under the guidelines. R-134a is the major refrigerant used in the manufacture of domestic refrigeration appliances such as single and double-door upright fridges, deep freezers, and water coolers and dispensers. There are two enterprises, Capri and Imperial, that manufacture domestic refrigerators. At the 82nd meeting, the Executive Committee approved a demonstration project for Capri to convert one manufacturing line for domestic refrigerator from R-134a to R-600a. The project is delayed and is expected to be completed by June 2025.

15. The commercial refrigeration manufacturing subsector consists of many small enterprises spread across the country consuming R-134a, R-404A and R-507A. R-134a is used in manufacturing small to medium-sized refrigeration appliances where R-290 has just been introduced; for example, the enterprise Imperial is assembling R-290-based bottle coolers. R-404A is mainly used in the manufacturing of medium to large-sized appliances such as cold rooms, chillers and freezers, and in mid- and low-temperature applications. Except for Capri, other enterprises with small consumption also use HFCs to manufacture or assemble commercial equipment. The very low HFC consumption by these enterprises render them

ineligible for funding, as the project cost would exceed the cost-effective threshold. Alternative refrigerants for the sector include R-600a, R-717, R-744 and R-290.

Refrigeration and air-conditioning servicing sector

16. There are approximately 6,700 technicians (including 1,785 women) and 1,950 workshops consuming HFCs in Zimbabwe. The formal sector comprises of 70 per cent (4,690) technicians and has well-equipped workshops; 30 per cent of the technicians are from the informal sector that do not have defined workshops and proper tools, and normally service small RAC units as domestic fridges. Most technicians in the formal sector are formally trained. Zimbabwe has seven Government-owned colleges, two privately owned, and several enterprises that train refrigeration technicians. Under the HPMP, training was provided to 2,500 technicians, of which 1,700 were trained in hydrocarbons. A mandatory certification of RAC technicians has been implemented and a total of 286 technicians have been certified.

Domestic, commercial, industrial and transport refrigeration servicing

17. The domestic refrigeration sector accounts for 8.6 per cent in mt and 4.2 per cent in CO₂-eq tonnes of the total HFC consumption in the country. R-134a is the dominant refrigerant used for servicing various domestic refrigeration appliances, including single and double-door upright fridges, deep freezers, and water coolers and dispensers. Although a substantial number of appliances in the sector are still charged with HFC-134a, the majority of the imports are hydrocarbon-based appliances.

18. The commercial refrigeration subsector has the highest use of HFCs in the country, accounting for 33.2 per cent in mt and 36.4 per cent in CO₂-eq tonnes of total HFC consumption in the country. The main HFCs used are R-404A, HFC-134a and R-507A, in servicing stand-alone equipment, condensing units, and large centralized systems. R-134a is used in servicing small to medium-sized commercial refrigeration appliances and R-404A in servicing medium to large-sized appliances such as cold rooms, chillers and freezers, and in mid and low-temperature applications. The use of R-134a and R-404A has been increasing.

19. The industrial refrigeration subsector only consumes a small amount of HFC-407C in industrial processing plants in replacing HCFC-22. R-717 is also used for servicing industrial refrigeration appliances in the food storage and processing industries such as dairy, fish and meat processing. In transport refrigeration, R-134a is used for servicing railway wagons and R-404A is used for servicing refrigerated trucks which are imported from South Africa.

Residential and commercial air-conditioning servicing

20. The stationary AC sector consumes 45.5 per cent of the total HFCs in Zimbabwe. R-410A is the most common refrigerant, accounting for 67 per cent of the subsector's consumption in mt, followed by HFC-32 at 18 per cent and R-407C at 14 per cent. This subsector includes residential AC, packaged AC, commercial AC, and chillers. The demand for AC units in Zimbabwe is increasing due to rising ambient temperatures. Most imported AC units are pre-charged with R-410A, with capacities ranging from 9,000 to 72,000 BTUs. While the import of R-32-based AC units is growing, their higher price remains a barrier.

Mobile air-conditioning servicing

21. HFC-134a is the primary refrigerant used in the MAC sector, with negligible use of HFO-1234yf in the latest vehicle models. Over one million vehicles are imported annually, pre-charged with HFC-134a. The Government has also implemented restrictions on importing vehicles that are ten years or older; this has promoted the import of HFO-1234yf-based vehicles. However, the lack of training on handling HFO-1234yf refrigerant has limited its use among service technicians, hindering its widespread adoption in the MAC sector. There are two assembly plants in Zimbabwe that use HFC-134a in the assembly of vehicles, neither of which currently use HFO-1234yf.

Firefighting

22. In the firefighting sector, HFC-227ea (FM-200) and HFC-125 are the primary HFCs used as fire suppressants in fixed flooding systems for large-scale applications, such as thermal power stations and telecommunication facilities, as replacements for Halon 1301. It is estimated that over 5 mt of HFC-227ea are installed in fire suppression systems across the country. Imported HFC-227ea is primarily used for servicing these installed systems. Additionally, some HFC-125 is imported by petroleum processing enterprises for use as a fire suppressant at refueling stations nationwide. However, due to the high global warming potential (GWP) of HFC-125, these enterprises are being discouraged from using this suppressant.

IV. Stage I of the Kigali HFC implementation plan as submitted

Institutional, policy and regulatory framework

23. The Ministry of Environment, Climate, and Wildlife is the national body responsible for overseeing the implementation of the Montreal Protocol. The national ozone unit (NOU) within the Ministry is responsible for the operational aspects of implementing the Protocol. The Government has revised the Environmental Management Regulations of 2023, gazetted as Statutory Instrument 49 of 2023, to control ODS and greenhouse gases, including HFCs. These revised regulations include a mandatory licensing and quota system for the import and export of HFCs and HFC-based equipment. National quotas for HFCs will align with the country's obligations for HFC phase-down under the Montreal Protocol.

24. The revised regulations include provisions for mandatory certification for RAC technicians. Uncertified personnel are prohibited from servicing, repairing, installing, commissioning, or decommissioning RAC appliances. To combat illegal trade, the regulations control all transit shipments of controlled substances by requiring transit permits. Additionally, the regulations have adopted the 2022 World Customs Organization (WCO) Harmonized System (HS) codes for HCFCs and HFCs to better differentiate individual HFCs.

25. The Ministry of Energy and Power Development coordinated the development of the National Renewable Energy Policy and the National Energy Efficiency Policy, with involvement from the NOU. The Standards Association of Zimbabwe adopted the Minimum Energy Performance Standards (MEPS) for RAC appliances in March 2024. The National Energy Efficiency Policy, which aims to improve energy efficiency, is set to be launched in 2024.

Phase-down strategy for stage I of the Kigali HFC implementation plan

Overarching strategy

26. The Government of Zimbabwe has proposed a three-stage approach to reduce HFCs in line with the Montreal Protocol phase-down schedule: stage I (2024-2029), stage II (2030-2040), and stage III (2040-2045). In stage I, Zimbabwe aims to freeze its HFC consumption at the baseline level by 2024 and achieve a 10 per cent reduction from this baseline by 2029. Stage I of the KIP will be implemented in an integrated manner with stage II of the HPMP to optimize the impact.

Proposed reductions

Table 7. HFC consumption forecast under unconstrained scenario, Montreal Protocol limits and proposed HFC reductions under stage I (CO₂-eq tonnes)

	2023*	2024	2025	2026	2027	2028	2029
HFC consumption forecast (annual growth rate of 6 per cent**)	842,264	892,463	945,654	1,002,015	1,061,735	1,125,014	1,192,065

	2023*	2024	2025	2026	2027	2028	2029
Montreal Protocol HFC consumption limits	842,264	1,210,624	1,210,624	1,210,624	1,210,624	1,210,624	1,089,562
Proposed HFC consumption under the KIP	-	1,210,624	1,210,624	1,210,624	1,210,624	1,210,624	1,089,562
Proposed reduction in HFC consumption from baseline (%)	-	0	0	0	0	0	10

* As per Article 7 data.

** Growth calculated based on average growth rate of 2020, 2022 and 2023 because 2021 data is not representative.

Proposed activities

27. The following activities are planned for stage I of the KIP:

- (a) Policies and regulatory framework: awareness-raising and training activities for 150 enforcement officers on updated ODS and HFC regulations; awareness-raising campaigns for importers and end users on the updated regulations; integrating HFC licensing and quota system into customs single window system software; development of labelling requirements to include restrictions on the GWP value of refrigerants and an enforcement procedure for implementing MEPS in the RAC sector, and development of MEPS for other potential sectors (MAC and commercial refrigeration equipment) based on assessment; training of 500 customs and enforcement officers in HFC import control (250 women); strengthening record keeping; and market monitoring and survey to prevent illegal trade (UNEP) (US \$115,000);
- (b) Strengthening the RAC sector, including supports to the RAC industry association; updating the code of practice and training curriculum for RAC technicians; 10 training sessions for 250 technicians (80 women) in good servicing practices, refrigerant recovery and recycling, and servicing with alternative technologies in commercial and industrial refrigeration and transport refrigeration as well as MAC subsectors; and five awareness-raising workshops for 100 end users in large commercial and industrial refrigeration sectors on the benefits of low-GWP and energy-efficiency technologies (UNEP) (US \$105,000);
- (c) Technical assistance and five sensitization workshops for 75 end users and small and medium-sized enterprise (SME) assemblers on good servicing and installation procedures as well as safety aspects with low-GWP, high energy efficiency technology options in commercial and industrial refrigeration subsectors, cost analysis, and long-term economic approach to the technology selection to support decision-making in adopting low-GWP technologies; provision of tools and equipment (leak detector for CO₂, NH₃ and R-290, test meters, vacuum pumps, Lokring, pipe cutter, CO₂ manifold gauge, etc.) for improving installation and servicing practices with low-GWP technologies; and training of 100 RAC technicians in using the tools (UNDP) (US \$55,000);
- (d) Technology demonstration of R-290-based split AC units, including procurement of 350 split AC units; installing them in Government institutions in 10 provinces to demonstrate the Government's commitment to R-290 technology; training technicians on installation; monitoring energy efficiency performance of the units; coordinating refrigerant recovery and disposal of dismantled units; coordinating the importation of R-290 refrigerant for servicing; and conducting five awareness-raising sessions for 100 end users to disseminate information on the demonstration project (UNDP) (US \$45,000); and

- (e) Refrigerant recovery and recycling in the MAC sector: conducting six training sessions for 60 technicians on refrigerant recovery and recycling in the MAC sector with tools; designating a focal point at each workshop for refrigerant recovery, recycling and transportation of unwanted refrigerant to a destruction facility; and procurement of five refrigerant recovery and recycling machines and cylinders (UNDP) (US \$20,000).

Project implementation, coordination and monitoring

28. Project coordination and monitoring is conducted by the NOU, the national ozone committee and the RAC associations at a total of US \$20,000 for UNEP with the following breakdown: staff and consultants (US \$13,000); monitoring travels (US \$4,000); and workshops and meetings (US \$3,000).

Gender policy implementation

29. In line with gender mainstreaming policies of the Multilateral Fund and decision 92/40(b), gender mainstreaming will be incorporated into all steps of the implementation of stage I of the KIP. The Government of Zimbabwe has established several policies and strategies to support women's empowerment and the advancement of gender equality, and a mechanism has been instituted to support their implementation. The Government of Zimbabwe recognizes the importance of gender equality and women's involvement for the successful implementation of the KIP. During project preparation, a gender assessment was conducted, and gender mainstreaming baseline status was defined. Stage I of the KIP aims to promote gender equality and women's involvement at all the levels of training and awareness-raising activities. A gender expert will be recruited to ensure that project staff and stakeholders will be sensitized to gender-related issues and have the knowledge of gender mainstreaming. The project has included a clear target that 55 per cent of the technicians to be trained in stage I will be women. Gender-disaggregated data will be collected.

Coordination of activities in the servicing sector under HCFC phase-out and HFC phase-down plans

30. Stage I of the KIP will be implemented simultaneously with stage II of the HPMP. The activities planned under the KIP will be complementary to that in the HPMP. The implementation of the two multi-year agreements will be optimized to maximize the impact, as shown in annex II to the present document.

Total cost of stage I of the Kigali HFC implementation plan

31. Zimbabwe had an average HFC consumption of 367.30 mt during the baseline years including consumption in both the manufacturing and servicing sector. The budget for stage I has been proposed at US \$360,000 (excluding agency support costs), in line with decision 92/37. No funding is requested for addressing the consumption in the manufacturing/assembly sector.

32. The proposed activities and cost of stage I of the KIP are summarized in table 8.

Table 8. Proposed cost of activities to be implemented in stage I of the KIP for Zimbabwe

Activity	Agency	Cost (US \$)
<i>Regulatory framework and control mechanisms (US \$115,000)</i>		
Awareness-raising and training activities for 150 enforcement officers on updated ODS and HFC regulations	UNEP	20,000
Awareness-raising campaigns on updated regulations for importers and end users	UNEP	10,000
Integrating HFC licensing and quota system into customs single window system software	UNEP	5,000
Developing, revising, and adopting standards and labelling of refrigerants	UNEP	30,000
Training of 500 customs and enforcement officers in HFC import control	UNEP	30,000
Strengthening record keeping by customs and reporting by enterprises	UNEP	10,000

Activity	Agency	Cost (US \$)
Continuous market monitoring and surveys to prevent illegal trade	UNEP	10,000
<i>Training of technicians and support to the industrial association (US \$105,000)</i>		
Supporting the RAC industry association to formalize the sector	UNEP	15,000
Updating the code of practice and training curriculum of RAC technicians	UNEP	20,000
Training of 250 refrigeration technicians in good servicing practices	UNEP	50,000
Awareness-raising campaigns for 100 end users on the benefits of using low-GWP and energy-efficiency technologies	UNEP	20,000
<i>Commercial and industrial refrigeration subsectors (US \$55,000)</i>		
Technical assistance, awareness-raising campaign for 75 end users and SMEs	UNDP	15,000
Provision of tools and equipment for training on use of tools for installation with low-GWP technologies (CO ₂ , NH ₃ and R-290)	UNDP	40,000
<i>AC sector (US \$45,000)</i>		
Demonstration of R-290 technology, supplying 350 units to end users	UNDP	40,000
Disseminating information on the demo project to 100 end users	UNDP	5,000
<i>MAC subsector (US \$20,000)</i>		
Training of 60 MAC technicians on handling HFO-1234yf and HFC-134a refrigerants; provision of 5 refrigerant recovery machines and cylinders	UNDP	20,000
<i>Project coordination, implementation and reporting (US \$20,000)</i>		
Coordination and management of KIP implementation	UNEP	20,000
Total		360,000

Implementation of the first tranche of stage I of the Kigali HFC implementation plan

33. The first funding tranche of stage I of the KIP, in the total amount of US \$211,000, will be implemented between January 2025 and December 2027 and will cover the activities listed in table 9.

Table 9: Activities planned for the first tranche of stage I of the KIP for Zimbabwe

Activity	Agency	Cost (US \$)
<i>Regulatory framework and control mechanisms (US \$64,000)</i>		
Awareness-raising and training activities for 150 enforcement officers on updated ODS and HFC regulations	UNEP	20,000
Awareness-raising campaigns on revised regulations to 50 importers and other key stakeholders	UNEP	5,000
Integrating HFC licensing and quota system into customs single window system software	UNEP	5,000
Developing, revising, and adopting standards and labelling of refrigerants	UNEP	15,000
Training of 200 customs and enforcement officers in HFC import control	UNEP	12,500
Strengthening record keeping by customs and reporting by enterprises	UNEP	3,500
Improving continuous market monitoring, including surveys	UNEP	3,000
<i>Training of technicians and support to the industrial association (US \$50,000)</i>		
Supporting the industry association to formalize the sector	UNEP	5,000
Updating the code of practice and training curriculum of RAC technicians	UNEP	20,000
Four workshops to train 100 refrigeration technicians in good servicing practices	UNEP	17,500
Awareness-raising campaigns to end users on the benefits of using low-GWP and energy-efficiency technologies	UNEP	7,500
<i>Commercial and industrial refrigeration subsectors (US \$37,500)</i>		
Awareness-raising campaign to 50 end users and SMEs	UNDP	7,500
Provision of tools and equipment for training on refrigeration	UNDP	30,000
<i>AC sector (US \$42,500)</i>		
Demonstration of R-290 technology, supplying 350 units to end users	UNDP	40,000
Disseminating information on the demo project to 100 end users	UNDP	2,500

Activity	Agency	Cost (US \$)
<i>MAC subsector (US \$10,000)</i>		
Supply of five recovery units to workshops	UNDP	10,000
<i>Project coordination, implementation and reporting (US \$7,000)</i>		
Coordination and management of KIP implementation	UNEP	7,000
Total		211,000

Project implementation, coordination and monitoring

34. Project coordination and monitoring will be carried out by the NOU, the national ozone committee and the RAC associations, at a total of US \$7,000, with the following breakdown: staff and consultants (US \$4,500); monitoring travel (US \$1,500); and workshops and meetings (US \$1,000).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

V. Comments

Institutional, policy and regulatory framework

HFC licensing and quota system

35. In line with decision 87/50(g), UNEP has confirmed that Zimbabwe has an established and enforceable system of licensing and quotas for monitoring HFC imports/exports in place, effective as of January 2023. The Government issued HFC import quotas for 2024 and estimates quotas for 2025 at 985,532 CO₂-eq tonnes, which is lower than the established baseline.

36. The Secretariat discussed regulatory measures to promote the adoption of R-600a by other enterprises through the demonstration project at Capri and to support the sustainability of the HFC-134a phase-out in domestic refrigeration manufacturing. The Government agreed to implement a ban on the import of HFC-134a-based domestic refrigerators by January 2026. In addition, the enforcement of MEPS and labelling requirements will support the import of low-GWP products.

Technical and cost-related issues

37. The Government proposes a 10 per cent reduction in HFC consumption from the baseline by 2029 in stage I of the KIP, in line with the Montreal Protocol phase-down schedule. The Secretariat noted that HFC consumption in 2023 is 30 per cent below the baseline and encouraged the Government to set ambitious yet achievable control targets to maximize environmental benefits. Upon discussion, the Government agreed to commit to a reduction of 10 per cent of the average HFC consumption in the baseline years, which is equal to a reduction of 37 per cent from the HFC baseline. The detailed control targets are presented in table 10 below. The Government of Zimbabwe will issue the quotas for 2025 taking into account the agreed maximum allowable targets for that year.

Table 10: Revised control targets for stage I of the KIP (CO₂-eq tonnes)

Particulars	2024	2025	2026	2027	2028	2029
Montreal Protocol reduction schedule of Annex F, Group I substances	1,210,624	1,210,624	1,210,624	1,210,624	1,210,624	1,089,562
Maximum allowable total consumption of Annex F, Group I substances	945,654	945,654	945,654	945,654	892,463	761,510
Percentage reduction in HFC consumption from the baseline (%)	22	22	22	22	26	37

38. In line with decision 92/37(b)(ii), the eligible funding for Zimbabwe to achieve a 37 per cent reduction from the baseline in stage I of the KIP is US \$432,000 plus agency support costs.

39. The Secretariat noted the delay in implementation of the conversion project at Capri and that the project is at its final stage of completion, and therefore recommends to the Executive Committee to extend the completion date to June 2025 to allow the implementation of the remaining activities.

40. Regarding the demonstration project, the Secretariat noted that its purpose was to assess the safety-related issues and adaptability of R-290 domestic air-conditioners in Zimbabwe. Therefore, it was agreed to focus on demonstrating the technology. The total number of units was reduced from 350 to 50, and the monitoring of energy efficiency will be included. Co-funding will be provided for the installation of the equipment. UNDP will submit a final report on the implementation of this project, including the HFC phase-out and energy-efficiency gains achieved, once the project is completed, in line with decision 92/36(g).

Total project cost

41. With the additional 20 per cent funding, activities for stage I of the KIP have been revised as summarized in table 11 (changes in funding and activity are in bold font).

Table 11. Revised cost of activities to be implemented in stage I of the KIP for Zimbabwe (US \$)

Activity	Agency	Cost
<i>Regulatory framework and control mechanisms (US \$165,000)</i>		
Establishing and enforcing ODS/HFC regulations, including a ban on the import of domestic refrigerators using HFC-134a	UNEP	20,000
Awareness-raising campaigns on updated regulations for importers and end users	UNEP	10,000
Integrating HFC licensing and quota system into customs single window system software	UNEP	5,000
Developing, revising, and adopting standards and labelling of refrigerants	UNEP	45,000
Training of 750 customs and enforcement officers in HFC import control	UNEP	45,000
Strengthening record keeping by customs and reporting by enterprises	UNEP	20,000
Continuous market monitoring and surveys to prevent illegal trade	UNEP	20,000
<i>Training of technicians and support to the industrial association (US \$107,000)</i>		
Supporting the RAC industry association to formalize the sector	UNEP	15,000
Updating the code of practice and training curriculum of RAC technicians	UNEP	22,000
Training of 250 refrigeration technicians in good servicing practices	UNEP	50,000
Awareness-raising campaigns for 100 end users on the benefits of using low-GWP and energy-efficiency technologies	UNEP	20,000
<i>Commercial and industrial refrigeration subsectors (US \$55,000)</i>		
Technical assistance, awareness-raising campaign for 75 end users and SMEs	UNDP	15,000
Provision of tools and equipment for training on use of tools for installation with low-GWP technologies (CO ₂ , NH ₃ and R-290)	UNDP	40,000
<i>AC sector (US \$45,000)</i>		
Demonstration of R-290 technology, including supplying 50 units to end users and monitoring energy efficiency	UNDP	40,000
Disseminating information on the demo project to 100 end users	UNDP	5,000
<i>MAC subsector (US \$20,000)</i>		
Training of 60 MAC technicians on handling HFO-1234yf and HFC-134a refrigerants; provision of five refrigerant recovery machines and cylinders to workshops	UNDP	20,000
<i>Project coordination, implementation and reporting (US \$40,000)</i>		
Coordination and management of KIP implementation	UNEP	40,000
Total		432,000

42. Stage I of the KIP will be implemented in three tranches. The schedule of HFC phase-down and HCFC phase-out commitments and of the KIP and HPMP tranches is presented in annex I to the present document.

Implementation plan for the first tranche of the Kigali HFC implementation plan

43. With the additional funding and revised implementation plan, the plan for the first tranche was adjusted as shown in table 12 (changes in funding and activity are in bold font).

Table 12: Revised activities for the first tranche of stage I of the KIP for Zimbabwe

Activity	Agency	Cost (US \$)
<i>Regulatory framework and control mechanisms (US \$83,000)</i>		
Establishing and enforcing ODS/HFC regulations, including a ban on the import of domestic refrigerators using HFC-134a	UNEP	20,000
Awareness-raising campaigns on revised regulations to 50 importers and other key stakeholders	UNEP	5,000
Integrating HFC licensing and quota system into customs single window system software	UNEP	5,000
Developing, revising, and adopting standards and labelling of refrigerants	UNEP	22,500
Training of 250 customs and enforcement officers in HFC import control	UNEP	17,500
Strengthening record keeping by customs and reporting by enterprises	UNEP	7,000
Improving continuous market monitoring, including surveys	UNEP	6,000
<i>Training of technicians and support to the industrial association (US \$54,500)</i>		
Supporting the industry association to formalize the sector	UNEP	5,000
Updating the code of practice and training curriculum of RAC technicians	UNEP	22,000
Four workshops to train 100 refrigeration technicians in good servicing practices	UNEP	20,000
Awareness-raising campaigns to end users on the benefits of using low-GWP and energy-efficiency technologies	UNEP	7,500
<i>Commercial and industrial refrigeration subsectors (US \$37,500)</i>		
Awareness-raising campaign to 50 end users and SMEs	UNDP	7,500
Provision of tools and equipment for training on refrigeration	UNDP	30,000
<i>AC sector (US \$42,500)</i>		
Demonstration of R-290 technology, including supplying 50 units to end users and monitoring energy efficiency	UNDP	40,000
Disseminating information on the demo project to 100 end users	UNDP	2,500
<i>MAC subsector (US \$10,000)</i>		
Provision of five refrigerant recovery machines and cylinders to workshops	UNDP	10,000
<i>Project coordination, implementation and reporting (US \$14,000)</i>		
Coordination and management of KIP implementation	UNEP	14,000
Total		241,500

Co-financing

44. Stage I of the KIP includes the demonstration of R-290 AC units. The Government of Zimbabwe will co-finance the cost of installation at US \$320 per unit for the demonstration project. The Government will continue to explore opportunities for co-financing during the implementation of the KIP.

2024-2026 business plan of the Multilateral Fund

45. UNEP and UNDP are requesting US \$432,000, plus agency support costs, for the implementation of stage I of the KIP for Zimbabwe. The total value of US \$272,895, including agency support costs, requested for the period of 2024–2026, is US \$114,800 above the amount in the business plan.

Sustainability of the HFC phase-down and assessment of risks

46. The Government of Zimbabwe has included in the KIP the development of a regulatory framework to ensure sustainability of HFC reduction, including a ban on the import of HFC-134a-based domestic refrigerators, enforcement of MEPS, and labelling requirements that incorporate the GWP of refrigerants. Frequent training of customs officers, support for training institutions, and awareness-raising activities planned under the KIP will continuously strengthen import control and capacity development in the refrigeration servicing sector, resulting in the sustained reduction of HFCs.

47. The KIP includes a risk analysis, highlighting that the risks to sustainability and successful implementation of the KIP are mainly related to the availability and accessibility of low-GWP alternative technologies (including price, expertise and skills for adoption), as well as the illegal trade of refrigerants. These risks are considered high and have been addressed through enforcement of regulations, a technology demonstration project, and awareness-raising activities. Other risks, such as compliance with control targets, timely implementation of the KIP, and the increased demand for HFCs due to high leakage rates from domestic AC units, are considered medium-level risks. These will be mitigated through strict enforcement of the HFC licensing and quota system, continuous collaboration with key stakeholders in the RAC industry, the establishment of a project management team, and the training of RAC technicians. The project management team will coordinate implementation, monitor activities, and reporting progress.

Impact on the climate

48. The activities proposed, including training in regulatory control of HFCs, support to the RAC servicing sector, training of technicians in good servicing practices, and the efforts to promote low-GWP alternatives through R-290 demonstration, indicate that the implementation of stage I of the KIP will reduce refrigerant emissions into the atmosphere, resulting in climate benefits. A calculation of the impact on the climate of the activities in the KIP indicates that by 2029, Zimbabwe will have reduced its emissions by approximately 835,548 CO₂-eq tonnes of HFCs, calculated as the difference between the business-as-usual scenario and the HFC reduction scenario.

Draft Agreement

49. A draft Agreement between the Government of Zimbabwe and the Executive Committee for stage I of the KIP has not been prepared as the Agreement template is still under consideration by the Executive Committee.

50. If the Executive Committee so wishes, the funds for stage I of the KIP for Zimbabwe could be approved in principle, and funds for the first tranche could be approved on the understanding that the Agreement would be prepared and presented at a future meeting, before the submission of the second tranche, and once the Agreement template has been approved.

VI. Recommendation

51. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage I of the Kigali HFC implementation plan (KIP) for Zimbabwe for the period 2024-2029 to reduce HFC consumption by 10 per cent of the country's average HFC consumption in the baseline years (or 37 per cent of the country's baseline) by 2029, in the amount of US \$488,160, consisting of US \$312,000, plus agency support costs of US \$40,560, for UNEP and US \$120,000, plus agency support costs of US \$15,600, for UNDP, as reflected in the schedule contained in annex I to the present document;

(b) Noting:

- (i) That, in line with decision 82/81(b), stage I of the KIP included an additional US \$462,841, consisting of US \$326,954, plus agency support costs of US \$22,887 for UNDP, and US \$100,000, plus agency support costs of US \$13,000 for the Government of France, related to the project approved at the 82nd meeting to phase out 14.50 mt (20,735 CO₂-eq tonnes) in the conversion from HFC-134a to isobutane (R-600a) in the manufacture of domestic refrigerators at Capri;
 - (ii) That the Government of Zimbabwe will establish its starting point for sustained aggregate reductions in HFC consumption based on guidance provided by the Executive Committee;
 - (iii) That, once the cost guidelines for HFC phase-down are agreed by the Executive Committee, reductions from the country's remaining HFC consumption eligible for funding will be determined in line with these guidelines;
 - (iv) That the reductions from the country's remaining HFC consumption eligible for funding referred to in subparagraph (b)(iii) above will be deducted from the starting point referred to in subparagraph (b)(ii);
 - (v) That the Government of Zimbabwe will put in place a ban on the import of HFC-134a-based domestic refrigerators by 1 January 2026;
 - (vi) That, upon completion of the end-user project included in stage I of the KIP, UNDP will submit a final report on the implementation of this project, including the HFC phase-out and energy-efficiency gains achieved, in line with decision 92/36(g);
- (c) Approving the first tranche of stage I of the KIP for Zimbabwe and the corresponding tranche implementation plan, in the amount of US \$272,895, consisting of US \$151,500, plus agency support costs of US \$19,695, for UNEP and US \$90,000, plus agency support costs of US \$11,700, for UNDP;
- (d) Requesting the Government of Zimbabwe, UNEP, UNDP and the Secretariat to finalize the draft Agreement between the Government of Zimbabwe and the Executive Committee for the reduction in consumption of HFCs, including the information contained in the annex referred to in subparagraph (a) above, and to submit it to a future meeting once the KIP Agreement template has been approved by the Executive Committee; and
- (e) Approving the extension of the project referred to in subparagraph (b)(i) above to 30 June 2025, and requesting UNDP to submit a project completion report on said project to the 97th meeting.

Annex I

SCHEDULE OF HFC PHASE-DOWN AND HCFC PHASE-OUT COMMITMENTS AND FUNDING TRANCHES UNDER THE KIGALI HFC IMPLEMENTATION PLAN AND THE HCFC PHASE-OUT MANAGEMENT PLAN FOR ZIMBABWE

Kigali HFC implementation plan (stage I)

Row	Particulars	2018*	2024	2025	2026	2027	2028	2029	Total
1.1	Montreal Protocol reduction schedule of Annex F substances (CO ₂ -eq tonnes)	n/a	1,210,624	1,210,624	1,210,624	1,210,624	1,210,624	1,089,561	n/a
1.2	Maximum allowable total consumption of Annex F substances (CO ₂ -eq tonnes)	n/a	945,654	945,654	945,654	945,654	892,463	761,510	n/a
2.1	Lead IA (UNEP) agreed funding (US \$)	0	151,500	0	0	106,500	0	54,000	312,000
2.2	Support costs for Lead IA (US \$)	0	19,695	0	0	13,845	0	7,020	40,560
2.3	Cooperating IA (UNDP) agreed funding (US \$)	326,954	90,000	0	0	0	0	30,000	446,954
2.4	Support costs for Cooperating IA (US \$)	22,887	11,700	0	0	0	0	3,900	38,487
2.5	Cooperating IA (France) agreed funding (US \$)	100,000	0	0	0	0	0	0	100,000
2.6	Support costs for Cooperating IA (US \$)	13,000	0	0	0	0	0	0	13,000
3.1	Total agreed funding (US \$)	426,954	241,500	0	0	106,500	0	84,000	858,954
3.2	Total support costs (US \$)	35,887	31,395	0	0	13,845	0	10,920	92,047
3.3	Total agreed costs (US \$)	462,841	272,895	0	0	120,345	0	94,920	951,001

* Approved at the 82nd meeting to phase out 14.50 mt (20,735 CO₂-eq tonnes) of HFC-134a for the conversion in the manufacture of domestic refrigerators at Capri (decision 82/81).

HCFC phase-out management plan from 2024 to 2030 (stage II)

Row	Particulars	2024	2025	2026	2027	2028	2029	2030	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	11.57	5.78	5.78	5.78	5.78	5.78	0.00	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	11.57	5.78	5.78	5.78	5.78	5.78	0.00	n/a
2.1	Lead IA (UNEP) agreed funding (US \$)	0	0	0	192,500	0	0	105,000	297,500
2.2	Support costs for Lead IA (US \$)	0	0	0	23,591	0	0	12,868	36,459
2.3	Cooperating IA (UNDP) agreed funding (US \$)	0	0	0	150,000	0	0	0	150,000
2.4	Support costs for Cooperating IA (US \$)	0	0	0	10,500	0	0	0	10,500
3.1	Total agreed funding (US \$)	0	0	0	342,500	0	0	105,000	447,500
3.2	Total support costs (US \$)	0	0	0	34,091	0	0	12,868	46,959
3.3	Total agreed costs (US \$)	0	0	0	376,591	0	0	117,868	494,459

Annex II

**SIMULTANEOUS IMPLEMENTATION OF THE HCFC PHASE-OUT MANAGEMENT PLAN
AND THE KIGALI HFC IMPLEMENTATION PLAN IN ZIMBABWE**

Category of activity	HPMP – stage II		KIP – stage I		HPMP+KIP combined (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
Support for associations	Support to RAC Association to mobilise and coordinate technicians for training	30,000	Supporting the RAC industry association to formalize the sector	15,000	45,000
Provision of tools	Identifying needs and providing equipment and tools to strengthen seven training institutions; providing equipment and tools to the RAC Association to facilitate its role in the certification of technicians; establishing six refrigerant recovery and recycling centres to reduce HCFC consumption in the commercial and industrial refrigeration subsectors	400,000	Provision of tools and equipment for training on use of tools for installation with low-GWP technologies (CO ₂ , NH ₃ and R-290)	40,000	440,000
Training of refrigeration technicians	Training 25 trainers and 1,000 refrigeration technicians in good servicing practices, in brazing competence and in the safe handling of flammable and toxic refrigerants	150,000	Training of 250 refrigeration technicians in good servicing practices	50,000	200,000
Training of MAC technicians			Training of 60 MAC technicians on handling HFO-1234yf and HFC-134a refrigerants; provision of 5 refrigerant recovery machines and cylinders	20,000	20,000
Development of codes of practice	Revising the training curriculum	10,000	Updating the code of practice and training curriculum of RAC technicians	22,000	32,000
Technology demonstration			Demonstration of R-290 technology and supplying 350 units to end users; and disseminating information on the demo project to 100 end users	45,000	45,000
Strengthening of licensing			Integrating HFC licensing and quota system into customs single window system software	5,000	5,000
Training of customs officers	Training 25 trainers and 1,000 customs and enforcement officers (including staff in tax, customs, revenue collection, and law enforcement department) in monitoring and controlling imports of HCFCs and identifying illegal trade; and conducting ongoing reviews and updates of the customs training curriculum to incorporate new issues into the customs training	130,000	Training of 500 customs and enforcement officers in HFC import control; ban on HFC-134a-based refrigerators; awareness-raising and training activities for 150 enforcement officers on updated ODS and HFC regulations; and awareness-raising campaigns on updated regulations for importers and end users	75,000	205,000
Strengthening of customs records			Strengthening record keeping by customs and reporting by enterprises through the training of 150 enforcement officers on registration of HFC imports and assessment and monitoring	20,000	20,000
Improving monitoring			Continuous market monitoring and surveys to prevent illegal trade	20,000	20,000

Category of activity	HPMP – stage II		KIP – stage I		HPMP+KIP combined (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
Certification of technicians	Developing standards and procedures, and continue implementing the certification of technicians in the RAC sector; stakeholder consultations and training on the certification process; conducting 10 awareness-raising campaigns and distributing certification procedures; and certifying 1,000 technicians	120,000			120,000
Standards and labelling	Developing technical standards for the safe handling of flammable and toxic refrigerants, as well as the standard for minimum energy efficiency in RAC equipment; stakeholder consultation, training and awareness-raising on the safety and energy efficiency standards; monitoring compliance in the implementation of safety and energy efficiency standards; supporting policy development on green procurement; and providing training for procurement officers on low-GWP, energy-efficient RAC equipment	110,000	Implementing MEPS and a labelling system to include a control on GWP of refrigerants	45,000	155,000
Awareness	Targeted awareness-raising activities for importers, distributors and end users on the need to move away from HCFCs and introduce alternative technologies	30,000	Awareness-raising campaigns for 100 end users on the benefits of using low-GWP and energy-efficiency technologies; and technical assistance and an awareness-raising campaign for 75 end users and SMEs	35,000	65,000
Coordination and monitoring	Project coordination and monitoring	60,000	Project coordination and monitoring	40,000	100,000
Total		1,040,000		432,000	1,472,000
Percentage of total (%)		71		29	100