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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-seventh Meeting
Montreal, 1–5 December 2025
Items 9(c) and (d) of the provisional agenda¹

PROJECT PROPOSALS: OMAN

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

Phase-out

- HCFC phase-out management plan (stage III, third tranche) UNIDO and UNEP Blanket approval

Phase-down

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

* Re-issued for technical reasons on 25 November 2025.

¹ UNEP/OzL.Pro/ExCom/97/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Oman

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage III)	UNIDO (lead), UNEP	88 th	100% phase-out by 2030

(II) LATEST ARTICLE 7 DATA (Annex C, Group I)	Year: 2024	9.62 ODP tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2024	
Chemical	Aerosol	Foam	Fire-fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					9.60				9.60
HCFC-123					0.02				0.02

(IV) CONSUMPTION DATA (ODP tonnes)			
2009–2010 baseline:	31.50	Starting point for sustained aggregate reductions:	32.57
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved:	32.57	Remaining:	0.00

(V) ENDORSED BUSINESS PLAN		2025	2026	2027	Total
UNIDO	ODS phase-out (ODP tonnes)	2.05	0.00	1.56	3.61
	Funding (US \$)	150,971	0	114,591	265,562
UNEP	ODS phase-out (ODP tonnes)	1.69	0.00	1.77	3.46
	Funding (US \$)	130,612	0	137,368	267,980

(VI) PROJECT DATA			2021	2022	2023	2024	2025	2026	2027	2028-2029	2030	Total
Montreal Protocol consumption limits			20.46	20.46	20.46	20.46	10.23	10.23	10.23	10.23	0	n/a
Maximum allowable consumption (ODP tonnes)			16.12	16.12	16.12	16.12	10.23	10.23	10.23	10.23	0	n/a
Funding agreed in principle (US \$)	UNIDO	Project costs	340,344	0	117,094	0	141,094	0	107,094	0	74,846	780,472
		Support costs	23,824	0	8,197	0	9,877	0	7,496	0	5,239	54,633
	UNEP	Project costs	182,864	0	116,000	0	116,000	0	122,000	0	89,500	626,364
		Support costs	23,034	0	14,612	0	14,612	0	15,368	0	11,274	78,900
Funds approved by ExCom (US \$)		Project costs	523,208	0	233,094	0	0	0	0	0	0	756,302
		Support costs	46,858	0	22,809	0	0	0	0	0	0	69,667
Total funds recommended for approval at this meeting (US \$)		Project costs					257,094					257,094
		Support costs					24,489					24,489

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Oman, UNIDO as the lead implementing agency has submitted a request for funding for the third tranche of stage III of the HCFC phase-out management plan (HPMP), at a total cost of US \$281,583, consisting of US \$141,094, plus agency support costs of US \$9,877, for UNIDO and US \$116,000, plus agency support costs of US \$14,612, for UNEP.² The submission includes a progress report on the implementation of the second tranche, the verification report on HCFC consumption for 2023 to 2024, and the tranche implementation plan for 2026 to 2027.

Report on HCFC consumption

2. The Government of Oman reported a consumption of 9.62 ODP tonnes of HCFCs in 2024, which is 69 per cent below the country's HCFC baseline for compliance. The 2020-2024 HCFC consumption is shown in table 1.

Table 1. HCFC consumption in Oman (2020-2024 Article 7 data)

HCFC	2020	2021	2022	2023	2024	Baseline
Metric tonnes (mt)						
HCFC-22	290.16	269.93	233.26	212.73	174.53	537.57
HCFC-123	0.00	0.00	0.00	1.00	1.00	0.00
HCFC-141b	0.00	0.00	0.00	0.00	0.00	10.15
HCFC-142b	0.00	0.00	0.00	0.00	0.00	12.05
Total (mt)	290.16	269.93	233.26	213.73	175.53	559.77
HCFC-141b in imported pre-blended polyols*	0.00	0.00	0.00	0.00	0.00	10.00**
ODP tonnes						
HCFC-22	15.96	14.85	12.83	11.70	9.60	29.57
HCFC-123	0.00	0.00	0.00	0.02	0.02	0.00
HCFC-141b	0.00	0.00	0.00	0.00	0.00	1.12
HCFC-142b	0.00	0.00	0.00	0.00	0.00	0.78
Total (ODP tonnes)	15.96	14.85	12.83	11.72	9.62	31.47
HCFC-141b in imported pre-blended polyols*	0.00	0.00	0.00	0.00	0.00	1.10**

* Country programme (CP) data

** Average consumption between 2007 and 2009

3. HCFC consumption has been decreasing due to the implementation of the e-licensing and quota system supported by activities implemented through the HPMP. The use of HCFC-22 and HCFC-142b to produce extruded polystyrene (XPS) foam and HCFC-141b in the polyurethane (PU) foam manufacturing sector has been fully phased out and imports of HCFC-141b contained in imported pre-blended polyols have not been permitted into the country since 2017. The consumption of HCFC-22 was also reduced through training of refrigeration technicians and technical assistance activities in the servicing sector. There are no imports of new HCFC-22-based units in Oman which is contributing to reducing future service needs. The import of a small amount of HCFC-123 is used for servicing air-conditioning (AC) equipment.

Country programme implementation report

4. The Government of Oman reported HCFC sector consumption data under the 2024 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

² As per the letter of 26 August 2025 from the Environment Authority of Oman to the UNIDO.

Verification report

5. The verification report confirmed that the Government was implementing a licensing and quota system for HCFC imports and exports and that the total consumption of HCFCs reported under Article 7 of the Montreal Protocol for 2023 to 2024 was correct (as shown in table 1 above). The verification concluded that Oman has achieved the Montreal Protocol targets supported by the successful implementation of the import quota system and the ozone layer protection regulations. The country is on track to reduce HCFC consumption from the baseline by 67.5 per cent by 2025. Full elimination of HCFCs is planned by 2030, in line with the Montreal Protocol.

Progress report on the implementation of the second tranche of stage III of the HCFC phase-out management plan

Legal framework

6. The HCFC import and export licensing system has been in place since 2001 and since 2016 has been implemented through the e-licensing system (BAYAN). The country has prohibited the import of HCFC-142b and HCFC-141b in bulk and contained in pre-blended polyols since 1 January 2015 and 1 January 2017, respectively. The Government also issued a decree in November 2019 banning the venting of refrigerants into the atmosphere during servicing, installation, operation and decommissioning of refrigeration and air-conditioning (RAC) equipment; establishing mandatory refrigerant recovery and recycling and quarterly reporting on recovered and reused refrigerants and on stock of unusable refrigerants; mandatory leak detection of all controlled substances in RAC systems with a charge greater than 3 kg; and requiring the licensing of all entities (i.e., importers, distributors, retailers, and service workshops) handling ODS in the RAC sector.

7. The country ratified the Kigali Amendment on 8 November 2024. During the implementation of the second tranche, the national ozone committee (NOC) was restructured to include representatives from the Ministry of Commerce, Industry and Investment Promotion; Department of Customs; Ministry of Labour; Public Authority for Special Economic Zones and Free Zones; Oman Chamber of Commerce and Industry; and the University of Technology and Applied Science. This multi-stakeholder committee will focus on updating and adopting policies, regulations, and strategies related to ODS and HFCs to ensure the sustainability of HCFC phase-out and the implementation of the Kigali Amendment.

8. The national ozone unit (NOU) is preparing a draft update of the Ozone Layer Protection Regulation (107/2023) to include HFCs as controlled substances, following the country's ratification of the Kigali Amendment in November 2024. The NOU, in cooperation with customs, updated the Harmonized System (HS) code classifications for controlled substances under the Montreal Protocol to 12 digits and integrated these updates into BAYAN.

Refrigeration servicing sector

9. The following activities were implemented in the refrigeration servicing sector under the second tranche:

- (a) *Strengthening institutional capacity, regulation and awareness:* A training session was organized for 10 enforcement officers to equip them with essential knowledge on the Montreal Protocol and ODS, and enhance their enforcement role; and a short awareness film on protecting the ozone layer and reducing climate impacts is being produced to raise greater public awareness of the Montreal Protocol;
- (b) *Assistance for service technicians and end users for minimum-leakage:* A three-day workshop was organized to train 10 trainers on good and safe servicing practices and

current technologies, as well as introducing future certification assessment methodologies; and a training workshop was organized to train 10 technicians on good servicing practices and the safe handling of refrigerants through recovery, recycling, and proper leak detection, and the latest innovations in refrigerants, tools, and equipment; and

- (c) *Refrigerant recovery, recycling, and reclamation (RRR) network*: A field visit to two potential hosting organizations of refrigerant RRR and an awareness-raising workshop took place; a site visit to an Saudi Arabia RRR centre was organized to gain experience and explore potential cooperation opportunities on the RRR network; a survey of RAC equipment service providers was conducted, of which 10 expressed interest in hosting the refrigerant reclamation centre; and a workshop was organized for 36 participants (including eight women) on leakage minimization and RRR, attended by key stakeholders including representatives from Government agencies and servicing enterprises.

Project implementation and monitoring

10. Of the US \$52,094 allocated for the project management unit (PMU) under the second tranche, US \$19,418 has been disbursed for the verification of HCFC consumption.

Level of fund disbursement

11. As of September 2025, of the US \$756,302 approved so far, US \$412,180 had been disbursed (US \$232,965 for UNIDO and US \$179,215 for UNEP), as shown in table 2. The balance of US \$344,122 will be disbursed in 2025 and 2026.

Table 2. Financial report of stage III of the HPMP for Oman (US \$)

Agency	First tranche		Second tranche		Total		
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed	Balance
UNIDO	340,344	205,784	117,094	27,181	457,438	232,965	224,473
UNEP	182,864	159,615	116,000	19,600	298,864	179,215	119,649
Total	523,208	365,399	233,094	46,781	756,302	412,180	344,122
Disbursement rate (%)	70		20		55		

Implementation plan for the third tranche of stage III of the HCFC phase-out management plan

12. The following activities will be implemented between January 2026 and December 2027:
- (a) *Strengthening institutional capacity, regulation and awareness*: A workshop of the NOC to oversee implementation and discuss policies, two training workshops for 40 customs and enforcement officers on updates to the e-licencing system, continued awareness-raising to the public and RAC sector on the minimum-leakage programme, and a study on energy efficiency and the economic benefits of the minimum-leakage initiative (UNEP) (US \$30,000); and an awareness campaign to promote the RRR network to key stakeholders and end users, and provision and delivery of an additional six refrigerant identifiers for customs and environmental inspectors (UNIDO) (US \$30,000);
- (b) *Assistance for service technicians and end users for minimum-leakage*: Finalize updates to the training curricula for vocational training institutes, train 320 RAC technicians on good servicing practices, and implement the certification programme and initial training and certification of 140 technicians (UNEP) (US \$86,000); and finalize the updated safety standards and specifications for hydrocarbons, complete the training on the use of the equipment provided for the five training centres, procure leak detection devices for

certified technicians, and organize one workshop on emerging technologies for 50 end users promoting minimum-leakage (UNIDO) (US \$59,000);

- (c) *RRR network*: Strengthen the RRR capacity through the provision of equipment to establish a reclamation centre (UNIDO) (funds from the previous tranche); and
- (d) *Project monitoring*: Operation of the PMU, monitoring, and verification of HCFC consumption, including US \$28,094 for staff and consultants and US \$24,000 for monitoring and 2025-2026 HCFC verification (UNIDO) (US \$52,094).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Progress report on the implementation of the second tranche of stage III of the HCFC phase-out management plan

Legal framework

13. The Government of Oman has issued HCFC import quotas for 2025, 2026, and 2027 at 8.96 ODP tonnes, 7.30 ODP tonnes, and 5.65 ODP tonnes, respectively, which are lower than the Montreal Protocol control targets.

14. Regarding the status of the ban on the use and import of refrigerants in disposable cylinders included in stage III, UNEP reported that the ban was initially planned in 2020, yet it was not feasible to do so due to the lack of both institutional capacity and infrastructure to support its enforcement. The ban is expected to be considered and finalized as part of the ongoing implementation of stage III.

Refrigeration servicing sector

15. Establishment of the reclamation centre was delayed as the initially identified hosts, Bahwan and Genetco, withdrew their proposal. UNIDO and the NOU are implementing several activities to address the challenges in selecting a host, including learning from the experience of Saudi Arabia, organizing a workshop on minimum-leakage and RRR to promote interest among RAC enterprises in hosting the centre, and recruiting a national expert to conduct a feasibility study on cost-effectiveness, supporting policies, and the market for the successful implementation of the RRR centre. Several enterprises have expressed interest, and once the new host is selected, the equipment (including a reclamation unit, identifiers, and recovery cylinders) will be provided to the host enterprise. The activity is expected to be implemented in the third tranche.

Gender policy implementation

16. The Multilateral Fund gender policy continues to be considered throughout project implementation. Activities specific to women's participation were conducted under the second tranche, were monitored and encouraged during recruitment and capacity-building activities. Under the third tranche, this will be expanded to ensure all project documentation, online and in-person events and discussions, and public awareness campaigns are gender-responsive, and that all monitoring and evaluation activities include reporting specific to women's engagement.

Sustainability of the HCFC phase-out and assessment of risks

17. Oman continued to develop and strengthen its legal framework to create an enabling environment for a sustainable phase-out. Key measures include an e-licensing system; a ban on the import of HCFC-141b

(both in bulk and contained in pre-blended polyols) and HCFC-142b; a ban on venting refrigerants into the atmosphere; mandatory recovery, recycling, and quarterly reporting of refrigerants; mandatory leak detection and logging for all controlled substances in RAC systems with a charge greater than 3 kg; and a licensing requirement for all entities handling ODS. The training of technicians, the planned implementation of the certification scheme, and the strengthening of the reclamation network will further enhance the sustainability of the phase-out. The country is committed to phasing out HCFCs by 2030 and the implementation is on track. The identified risk to the smooth implementation of the HPMP is the possible delay in the establishment of the RRR centre due to challenges in selecting a host. The NOU with the support from UNIDO is conducting several activities to address the delay, as discussed in paragraph 15 above.

Conclusion

18. The verification report confirmed that the Government is enforcing a licensing and quota system for the import and export of HCFCs, and the HCFC consumption in 2024 is 69 per cent below the HCFC baseline for compliance and 40 per cent below the control target stipulated in the Agreement with the Executive Committee. The implementation of the HPMP is progressing, with an overall disbursement rate of 55 per cent (70 per cent for the first tranche and 20 per cent for the second tranche). While the establishment of the RRR centre has been delayed due to challenges in selecting a host, the NOU is addressing this through several mitigation activities. The implementation of other planned activities is progressing well, and the execution of the third tranche will ensure the country meets its targets under the Montreal Protocol and its Agreement.

RECOMMENDATION

19. The Fund Secretariat recommends that the Executive Committee note the progress report on the implementation of the second tranche of stage III of the HCFC phase-out management plan (HPMP) for Oman, and further recommends blanket approval of the third tranche of stage III of the HPMP and the corresponding 2026–2027 tranche implementation plan for Oman at the funding levels shown in the table below.

	Project title	Project funding (US \$)	Support costs (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage III, third tranche)	141,094	9,877	UNIDO
(b)	HCFC phase-out management plan (stage III, third tranche)	116,000	14,612	UNEP

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

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

LATEST ARTICLE 7 DATA (Annex F)	Year: 2024	1,154.54 mt	2,275,115 CO ₂ -eq tonnes
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SECTORAL HFC CONSUMPTION DATA (CO ₂ -eq tonnes) AND ACTIVITIES									
	Aerosol	Foam	Fire-fighting	Air-conditioning and refrigeration				Solvent	Other
				Manufacturing			Servicing		
				Refrigeration	AC	Other			
Latest CP report (2024)		0	17,291				2,257,824		
KIP stage I activities as agreed (Y/N)		N	N				Y		

AVERAGE 2022–2024 HFC CONSUMPTION IN SERVICING	1,170.37 mt	2,221,687 CO ₂ -eq tonnes
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BASELINE CONSUMPTION DATA (CO₂-eq tonnes)	2022	2023	2024	Average 2022-2024*
HFC annual consumption	2,089,387	2,300,559	2,275,115	2,221,687
HCFC baseline (65%)				655,323
HFC baseline (“interim”)				2,877,010

* As a Group 2 Article 5 party, the HFC baseline of Oman is determined using the average consumption from 2024-2026; for the current submission, the most recent three years (2022-2024) of data are being used in the “interim”.

HFC CONSUMPTION ELIGIBLE FOR FUNDING (CO₂-eq tonnes)	
Starting point for sustained aggregate reductions	TBD
Previously approved HFC phase-down investment projects	No
Aggregate reductions from previously approved projects	n/a

PROJECT DATA AS AGREED			2025*	2026-2027	2028	2029	2030	2031	2032	Total
Consumption (CO ₂ -eq tonnes)	Montreal Protocol limits ("interim")		n/a	n/a	2,877,010	2,877,010	2,877,010	2,877,010	2,589,309	n/a
	Maximum allowable		2,877,010	2,877,010	2,877,010	2,877,010	2,646,317	2,646,317	2,415,624	n/a
	Reduction from "interim" baseline (%)		0.00	0.00	0.00	0.00	8.02	8.02	16.04	n/a
Amounts recommended in principle (US \$)	UNEP	Project costs	478,828	0	396,555	0	165,632	0	0	1,041,015
		Support costs	57,271	0	47,430	0	19,811	0	0	124,512
	UNIDO	Project costs	195,000	0	174,000	0	0	0	0	369,000
		Support costs	13,650	0	12,180	0	0	0	0	25,830
	Total project costs		673,828	0	570,555	0	165,632	0	0	1,410,015
	Total support costs		70,921	0	59,610	0	19,811	0	0	150,342
	Total funds		744,749	0	630,165	0	185,443	0	0	1,560,357

* Recommended for approval at the present meeting

Reduction from remaining consumption eligible for funding in stage I (CO ₂ -eq tonnes)	461,386
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Secretariat's recommendation	Individual consideration
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PROJECT DESCRIPTION

20. The present document contains the following sections:

- I. Summary of the proposal as submitted
- II. Background: Status of implementation of the HCFC phase-out management plan and previous HFC-related activities
- III. HFC consumption overview: HFC consumption levels, trends, and consumption by sector
- IV. Stage I of the Kigali HFC implementation plan, as submitted: Regulatory framework, phase-down strategy, total stage cost, and implementation plan for the first tranche
- V. Secretariat's comments, including the agreed cost of activities
- VI. Recommendation

I. Summary of the proposal as submitted

21. On behalf of the Government of Oman, 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 \$1,571,177, consisting of US \$1,041,015, plus agency support costs of US \$135,332 for UNEP and US \$369,000, plus agency support costs of US \$25,830, for UNIDO, as originally submitted.³

22. As an Article 5, Group 2 country, Oman's HFC baseline will be calculated based on the average consumption from 2024 to 2026. However, since this data is not yet available, the Government proposes using HFC consumption data from the most recent three-year period (2022–2024) to establish an “interim” baseline for setting stage I targets which is calculated as 2,877,010 CO₂-eq tonnes. “Interim” baseline is used only for the purposes of this project by the Government of Oman and does not constitute a new concept under the Kigali Amendment. The implementation of stage I of the KIP will assist the Government of Oman in meeting the target of 16.04 per cent reduction from its “interim” baseline by 1 January 2032.

23. The first tranche of stage I of the KIP being requested at this meeting amounts to US \$749,726, consisting of US \$478,828, plus agency support costs of US \$62,248 for UNEP and US \$195,000, plus agency support costs of US \$13,650, for UNIDO, as originally submitted, for the period of January 2026 to December 2028.

II. Background

Status of implementation of the HCFC phase-out management plan

24. Table 3 presents information on the HCFC phase-out management plan (HPMP) in Oman as of October 2025.

Table 3. HPMP implementation status for Oman

	Stage I	Stage II	Stage III
Meeting when HPMP was approved	65 th	75 th	88 th
Reduction from baseline	10% by 2015	35% by 2020	100% by 2030
Total stage cost (US \$)	434,120	485,000	1,406,836

³ As per the letter of 18 August 2025 from the Environment Authority of Oman to UNEP

	Stage I	Stage II	Stage III
Date of completion (actual/planned)	31 December 2017	31 December 2021	31 December 2031

Status of implementation of previous HFC-related activities

25. Table 4 presents an overview of activities implemented in Oman in the context of the Kigali Amendment that have been funded by the Multilateral Fund.

Table 4. Previously approved HFC-related activities in Oman

Approval meeting	Project title	Implementing agency	Cost (US \$)	Date of completion
74 th	Survey of ODS alternatives	UNIDO	110,000	July 2018
81 st	Enabling activities for HFC phase-down	UNEP	150,000	December 2021

III. HFC consumption overview

HFC consumption levels

26. Oman only imports HFCs for use in the refrigeration and air-conditioning (RAC) servicing, fire-fighting, and foam sectors. The most consumed substances in 2024 were HFC-134a (41.6 per cent of total HFC consumption in CO₂-equivalent (CO₂-eq) tonnes), R-404A (28.7 per cent), R-410A (25.3 per cent), and other HFCs (4.4 per cent). Table 5 presents the country's HFC consumption as reported to the Ozone Secretariat under Article 7 of the Montreal Protocol and the country's "interim" HFC baseline.

Table 5. HFC consumption (2020–2024 Article 7 data) and "interim" baseline in Oman

HFC	GWP	2020	2021	2022	2023	2024
Metric tonnes (mt)						
HFC-32	675	4.50	0.00	4.28	8.93	4.28
HFC-134a	1,430	656.59	1,105.44	702.96	751.84	661.31
HFC-152a	124	70.00	74.20	17.01	22.00	0.00
HFC-227ea	3,220	27.34	12.41	9.85	10.74	5.37
R-404A	3,922	92.94	68.23	129.55	151.75	166.76
R-407C	1,774	27.18	23.44	36.51	30.65	34.89
R-410A	2,088	177.36	115.82	225.12	251.26	276.05
Others*		0.00	0.78	0.94	3.18	5.89
Total (mt)		1,055.91	1,400.32	1,126.21	1,230.35	1,154.54
CO₂-eq tonnes						
HFC-32	675	3,038	0	2,889	6,028	2,886
HFC-134a	1,430	938,924	1,580,785	1,005,227	1,075,131	945,676
HFC-152a	124	8,680	9,201	2,109	2,728	0
HFC-227ea	3,220	88,035	39,951	31,720	34,583	17,291
R-404A	3,922	364,474	267,555	508,047	595,103	653,950
R-407C	1,774	48,213	41,581	64,761	54,369	61,897
R-410A	2,088	370,239	241,781	469,946	524,505	576,250
Others*		0	4,937	4,686	8,113	17,165
Total (CO₂-eq tonnes)		1,821,602	2,185,789	2,089,387	2,300,559	2,275,115
HFC "interim" baseline calculation (CO₂-eq tonnes)						
HFC average consumption in 2022-2024					2,221,687	
HCFC baseline (65%)					655,323	
"Interim" HFC baseline					2,877,010	

* Including HFC-236fa, HFC-245fa, R-407A, R-407F, R-448A, R-449A, R-452A, and R-507A.

27. The HFC consumption trended upwards despite fluctuations from 2020 to 2024, attributed to economic development and a market transition away from HCFCs. The high HFC-134a import in 2021, as

compared to other years, was likely driven by higher demand in commercial refrigeration and market dynamics such as stockpiling in response to price fluctuations.

Country programme implementation report

28. The sectoral HFC consumption data provided by the Government of Oman in its country programme (CP) implementation report for 2024 is consistent with the data reported under Article 7 of the Montreal Protocol.

HFC consumption trends

29. The HFC consumption has fluctuated in the period of 2020 to 2024 with an overall increasing trend. This is attributed to several factors including the economic development, impact of the COVID-19 pandemic, and phase-out HCFCs. HCFC consumption has been decreasing consistently from 2020 to 2024 and the main alternatives replacing HCFCs have been HFCs.

HFC consumption by sector

30. HFCs are mainly consumed for servicing RAC equipment (92.9 per cent in mt and 91.0 per cent in CO₂-eq tonnes) and charging equipment assembled and installed onsite (5.2 per cent in mt and 7.7 per cent in CO₂-eq tonnes), with a small consumption in extruded polystyrene (XPS) foam (1.1 per cent in mt and 0.1 per cent in CO₂-eq tonnes) and firefighting equipment manufacturing (0.7 per cent in mt and 1.2 per cent in CO₂-eq tonnes), as shown in table 6.

Table 6. HFC consumption in Oman by sector (2020-2024)

Sector	2020	2021	2022	2023	2024	Average 2022-2024	Share of total (%)
Metric tonnes							
XPS foam manufacturing	70.00	74.20	17.01	22.00	0.00	13.00	1.1
Firefighting manufacturing	27.34	12.41	9.85	10.74	5.37	8.65	0.7
Subtotal manufacturing	97.34	86.61	26.86	32.74	5.37	21.66	1.9
Servicing	908.48	1,260.15	1,043.24	1,137.77	1,082.53	1,087.85	92.9
Assembly and installation	50.09	53.56	56.12	59.84	66.64	60.87	5.2
Total (mt)	1,055.91	1,400.32	1,126.22	1,230.35	1,154.54	1,170.37	100.0
CO₂-eq tonnes							
XPS foam manufacturing	8,680	9,201	2,109	2,728	0	1,612	0.1
Firefighting manufacturing	88,035	39,960	31,720	34,583	17,291	27,865	1.2
Subtotal manufacturing	96,715	49,161	33,829	37,311	17,291	29,477	1.3
Servicing	1,579,793	1,983,616	1,896,366	2,095,639	2,075,477	2,022,494	91.0
Assembly and installation	145,093	153,024	159,192	167,610	182,350	169,717	7.7
Total (CO₂-eq tonnes)	1,821,602	2,185,801	2,089,387	2,300,560	2,275,118	2,221,688	100.0

31. Based on the sectoral consumption data using average consumption from 2022 to 2024, the RAC servicing sector is dominated by HFC-134a consumption in the mobile air-conditioning (MAC) subsector (55.4 percent in mt and 41.7 percent in CO₂-eq tonnes), followed by R-410A with a small amount of HFC-32 in residential air-conditioning (AC) (20.9 percent in mt and 22.6 percent in CO₂-eq tonnes); R-404A in large commercial refrigeration (19.0 percent in mt and 9.2 percent in CO₂-eq tonnes); R-404A, R-407C, R-410A and small amounts of others in local assembly and installation (5.2 per cent in mt and 7.6 per cent in CO₂-eq tonnes); and other subsectors. A breakdown of consumption by sector and by substances is shown in tables 7 and 8.

Table 7. HFC consumption in Oman by sector (average of 2022-2024) (mt)

Sector	HFC-32	HFC-134a	R-404A	R-407C	R-410A	HFC-152a*	HFC-227ea	Others**	Total***	Share of total (%)
Manufacturing										
XPS foam	0.00	0.00	0.00	0.00	0.00	13.00	0.00	0.00	13.00	1.1
Firefighting	0.00	0.00	0.00	0.00	0.00	0.00	8.65	0.00	8.65	0.7
Subtotal manufacturing	0.00	0.00	0.00	0.00	0.00	13.00	8.65	0.00	21.66	1.9
Refrigeration and AC servicing										
Refrigeration subsectors										
Domestic	0.00	49.43	0.00	0.00	0.00	0.00	0.00	0.00	49.43	4.2
Commercial (small)	0.00	6.16	0.00	0.00	0.00	0.00	0.00	0.00	6.16	0.5
Commercial (large)	0.00	0.00	107.21	0.00	0.00	0.00	0.00	0.34	107.55	9.2
Industrial	0.00	0.00	5.63	0.00	0.00	0.00	0.00	0.65	6.28	0.5
Transport	0.00	0.00	8.85	0.00	0.00	0.00	0.00	0.84	9.70	0.8
Air-conditioning subsectors										
Residential	5.83	0.00	0.00	0.00	239.08	0.00	0.00	0.00	244.91	20.9
Commercial and industrial	0.00	1.22	0.00	9.95	4.28	0.00	0.00	0.00	15.45	1.3
Mobile	0.00	647.95	0.00	0.00	0.00	0.00	0.00	0.00	647.95	55.4
Chillers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.0
Subtotal servicing	5.83	704.76	121.70	9.95	243.36	0.00	0.00	2.26	1,087.86	92.9
Local installation and assembly										
Commercial and industrial AC	0.00	0.61	0.00	24.07	7.45	0.00	0.00	0.00	32.14	2.7
Commercial refrigeration (large)	0.00	0.00	24.16	0.00	0.00	0.00	0.00	0.84	25.00	2.1
Industrial refrigeration	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.21	1.36	0.1
Transport refrigeration	0.00	0.00	2.34	0.00	0.00	0.00	0.00	0.02	2.37	0.2
Subtotal local installation and assembly	0.00	0.61	27.65	24.07	7.45	0.00	0.00	1.07	60.86	5.2
Total	5.83	705.37	149.35	34.02	250.81	13.00	8.65	3.34	1,170.38	100.0

* HFC-152a was most recently imported in 2023.

** Including R-407F and R-448A (large commercial refrigeration), R-507A (industrial refrigeration), R-452A (transport refrigeration), and HFC-236fa (servicing chillers).

*** Slight difference between CP data and sectoral data total is due to rounding during the conversion to CO₂-eq tonnes.**Table 8. HFC consumption in Oman by sector (average of 2022-2024) (CO₂-eq tonnes)**

Sector	HFC-32	HFC-134a	R-404A	R-407C	R-410A	HFC-152a	HFC-227ea	Others	Total	Share of total (%)
Manufacturing										
XPS foam	0	0	0	0	0	1,612	0	0	1,612	0.1
Firefighting	0	0	0	0	0	0	27,864	0	27,864	1.3
Subtotal manufacturing	0	0	0	0	0	1,612	27,864	0	29,476	1.3
Refrigeration and AC servicing										
Refrigeration subsectors										
Domestic	0	70,685	0	0	0	0	0	0	70,685	3.2
Commercial (small)	0	8,809	0	0	0	0	0	0	8,809	0.4
Commercial (large)	0	0	420,448	0	0	0	0	614	421,062	19.0
Industrial	0	0	22,079	0	0	0	0	2,590	24,669	1.1
Transport	0	0	34,719	0	0	0	0	1,780	36,499	1.6
Air-conditioning subsectors										
Residential	3,935	0	0	0	499,080	0	0	0	503,015	22.6
Commercial and industrial	0	1,745	0	17,650	8,935	0	0	0	28,329	1.3
Mobile	0	926,569	0	0	0	0	0	0	926,569	41.7
Chillers	0	0	0	0	0	0	0	2,875	2,875	0.1

Sector	HFC-32	HFC-134a	R-404A	R-407C	R-410A	HFC-152a	HFC-227ea	Others	Total	Share of total (%)
Subtotal servicing	3,935	1,007,807	477,246	17,650	508,014	0	0	7,860	2,022,512	91.0
Local installation and assembly										
Commercial and industrial AC	0	872	0	42,702	15,559	0	0	0	59,134	2.7
Commercial refrigeration (large)	0	0	94,746	0	0	0	0	1,224	95,969	4.3
Industrial refrigeration	0	0	4,510	0	0	0	0	850	5,360	0.2
Transport refrigeration	0	0	9,190	0	0	0	0	49	9,239	0.4
Subtotal local installation and assembly	0	872	108,445	42,702	15,559	0	0	2,123	169,702	7.6
Total	3,935	1,008,679	585,691	60,352	523,573	1,612	27,864	9,983	2,221,690*	100.0

* Slight difference between CP data and sectoral data total is due to rounding during the conversion to CO₂-eq tonnes.

Manufacturing sector

32. Based on the CP data reporting, HFCs are consumed in small amounts in manufacturing XPS foam (1.1 per cent in mt and 0.1 per cent in CO₂-eq tonnes) and firefighting equipment (0.7 percent in mt and 1.3 per cent in CO₂-eq tonnes). HFC-152a was used in XPS foam manufacturing and HFC-227ea was used for manufacturing and refilling firefighting equipment. During the HCFC phase-out, two foam sandwich panel manufacturing enterprises were assisted; one was converted to water blown technology and another one (Al-Khaleej Insulation Co LLC) was converted from HCFCs to HFC-152a and R-600a in XPS board manufacturing. Currently, comprehensive data on the foam and firefighting sectors are not available due to the unavailability of detailed industry-specific information. However, the proposal indicated that the collection of relevant industry data, including enterprise profiles, manufacturing processes, HFC consumption, and baseline equipment will be conducted in stage I to formulate the sectoral strategy for HFC phase-out in stage II.

Refrigeration and air-conditioning servicing sector

33. There are 6,669 registered technicians (no women so far) and 3,593 workshops consuming HFCs in Oman. In the implementation of the HPMP, 2,000 technicians have been trained in good servicing practices and leakage reduction. Oman has five professional training institutes that provide training to technicians, and four refrigerant recovery and recycling centres. There is no industrial association for the RAC service sector in Oman. During implementation of the HPMP, the national ozone unit (NOU) engaged RAC servicing enterprises in the implementation of the activities as well as in the development of policies and control measures through stakeholder consultations and joint organization of activities.

Domestic, commercial, industrial and transport refrigeration servicing

34. The refrigeration servicing subsectors using HFCs in Oman include domestic, commercial, industrial and transport refrigeration. The consumption attributed to servicing in the refrigeration subsectors during the 2022-2024 period was approximately 15 per cent in mt and 25 per cent in CO₂-eq tonnes, making this the second highest HFC consuming sector. R-404A is the primary HFC used in refrigeration servicing, followed by HFC-134a, with some limited use of R-507A, R-407A, R-407F and R-452A. There is no use of R-600a in refrigeration servicing.

Residential and commercial air-conditioning servicing

35. The stationary AC servicing subsector using HFCs in Oman encompasses residential, commercial and industrial AC and chillers. Survey data indicates that average 2022-2024 HFCs used for servicing these

AC subsectors accounted for approximately 22 per cent of consumption by metric tonnes and 24 per cent in CO₂-equivalent tonnes. R-410A is the primary HFC used in residential AC, followed by HFC-32. Commercial and industrial AC systems primarily use R-407C, with small amounts of HFC-134a. Other HFCs used in the AC sector include HFC-245fa and HFC-236fa, which account for roughly 1 per cent of total consumption in CO₂-eq tonnes and are mainly used to service chillers; there is no use of R-290 in the sector.

Mobile air-conditioning servicing

36. HFC-134a is the only HFC used in the MAC servicing sector. The average HFC-134a consumption in MAC servicing during the 2022-2024 period accounts for approximately 55 per cent in mt and 42 per cent in CO₂-eq tonnes and is the highest HFC consuming sector in Oman. As this sector was not addressed under previous phase-out programmes, stage I of the KIP will include specific servicing sector activities to target it.

Local installation and assembly subsector

37. The local installation and assembly subsector includes commercial and industrial AC and commercial, industrial and transport refrigeration equipment. Consumption in this sector accounts for approximately 5.2 per cent in mt and 7.6 per cent in CO₂-eq tonnes. R-404A is the main HFC used in the sector, followed by R-407C and R-410A, with some small use of other substances (HFC-134a, R-448A, R-407F, R-507A, R407A and R-452A). The country plans to collect more detailed information on the assemblers and installers in the sector during implementation of stage I of the KIP, and activities have been planned to reduce the HFC consumption in the sector.

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

Institutional, policy and regulatory framework

38. The NOU operates within the Climate Change Department on behalf of the Environment Authority (EPA), previously the Ministry of Environment and Climate Affairs, and is the national office that coordinates the implementation of all ODS phase-out and HFC phase-down activities in Oman. Several further Government authorities and ministries are also involved in the control and management of refrigerants.

39. Hazardous substances such as HFCs are regulated under the Law on Protection of the Environment and Prevention of Pollution, and administrative decision 50/2023 was introduced in 2023 to cover the registration, permitting, labelling, packaging, and fees for handling these substances. In line with Oman's ratification of the Kigali Amendment (November 2024), a legislative and regulatory framework was established to control the consumption of HFCs and HFC blends, with specific regulations being developed under stage I of the KIP. A national ozone committee was formed in 2012, headed by the NOU, with members comprising the Ministry of Commerce and Industry, the Ministry of Agriculture and Fisheries, Muscat Municipality, the Royal Oman Police, and other bodies. Ozone Layer Protection Regulations were issued by ministerial decree and amended to correspond to the requirements of the Montreal Protocol and to govern the climate affairs licensing for establishments engaged in the maintenance, repair, and service of RAC and for handling refrigerants.

40. Oman has an operational licensing system for the import and export of controlled substances that has been updated to include HFCs and HFC blends, with amendments to the quota system in development. A mandatory leak detection policy was developed and a ban on the import of second hand HCFC-based equipment was imposed. Customs codes have been updated to align with the 2022 update of the Harmonized System (HS) codes. Projects that relate to the emission of greenhouse gases require permits

under the 2016 Regulations for the Management of Climate Affairs, and the Center for Environmental Assessment and Permits, established in 2017, is responsible for the issuance of environmental permits.

41. The Ministry of Social Affairs, Labor and Vocational Training and UNEP developed the RAC technician certification framework, and national standards were introduced that include identification labels, energy efficiency in low-voltage equipment, and standard operating procedures (SOPs) for refrigerant handling and for the operation of the quota and licensing system. Minimum Energy Performance Standards (MEPS) and labelling became mandatory in 2019 for AC appliances and equipment with a cooling capacity of up to 20 kW; similar regulations are being developed for refrigeration equipment.

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

Overarching strategy

42. The Government of Oman proposes an 85 per cent reduction in HFC consumption by 2047 in accordance with the Montreal Protocol phase-down schedule. Under stage I, the country proposes to reduce HFC consumption by 16.04 per cent from the “interim” HFC baseline to enable the country to meet the 10 per cent reduction from the baseline, once established under the Montreal Protocol, by 2032. The reduction targets for subsequent stages include 20 per cent for 2037, 30 per cent for 2042 and the final 85 per cent for 2047 from the established baseline.

43. Oman is classified as an Article 5, Group 2 country, with 2024-2026 designated as its baseline years. As the official HFC baseline has not yet been established, the average consumption from 2022-2024 is being used for calculation of an “interim” baseline. Once data for 2026 becomes available, the “interim” baseline will be updated based on the reported consumption for the 2024-2026 period.

44. Stage I of the KIP will target HFC reductions in the servicing and local installation and assembly sectors. This prioritization is based on HFC consumption distribution and a thorough evaluation of alternative technologies, focusing on their availability, cost-effectiveness, sustainability, and environmental benefits. Addressing consumption in the manufacturing sector is deferred to stage II, contingent upon obtaining complete industrial data and identifying viable substitutes.

45. For the local installation and assembly sector, stage I of the KIP will focus on reducing the use of HFC-134a and R-410A in commercial and industrial AC applications. Other substances used in this sector will be addressed in subsequent stages.

46. The Government will strengthen the HFC quota system and develop its corresponding SOPs. Furthermore, it will establish a comprehensive legal and regulatory framework to prevent the illegal trade of HFCs, implement bans on the import of HFC-based new and second-hand equipment as well as non-refillable containers, and develop standards and SOPs for the safe transport and storage of HFCs and their alternatives. These efforts, combined with the promotion of good servicing practices and refrigerant RRR, are expected to enable the country to achieve its stage I targets.

Proposed reductions

47. Under a business-as-usual scenario, HFC consumption is projected to grow at an annual rate of 5 per cent from 2025 to 2029, decrease in 2030 and grow at 3 per cent from 2031 to 2032. This trend is primarily driven by increased demand for RAC equipment due to the country’s population growth and economic development. The projected decrease in 2030 (mainly in the servicing sector) is a result of the implementation of the HPMP. The detailed forecast for stage I is provided in table 9.

Table 9. HFC consumption forecast under the unconstrained scenario, Montreal Protocol limits, and proposed HFC reductions under stage I (CO₂-eq tonnes)

	2025	2026	2027	2028	2029	2030	2031	2032
HFC consumption forecast at various annual growth rate	2,407,424	2,560,463	2,670,714	2,806,337	2,943,127	2,718,275	2,793,130	2,868,962
Montreal Protocol HFC consumption limits ("interim")	n/a	n/a	n/a	2,877,010	2,877,010	2,877,010	2,877,010	2,589,309
HFC consumption levels proposed under the KIP ⁴	2,877,010	2,877,010	2,877,010	2,877,010	2,877,010	2,877,010	2,877,010	2,415,624
Proposed reductions from the "interim" HFC consumption baseline (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.04

Proposed activities

48. The activities in stage I of the KIP focus on HFC reduction in RAC servicing sector and the local installation and assembly sector as well as project monitoring and management.

49. The strategy for the local installation and assembly subsector involves a complete phase-out of HFC-134a and R-410A in commercial and industrial AC applications. The project will eliminate 0.61 mt of HFC-134a and 7.45 mt of R-410A used for the onsite charging of locally installed equipment, and all phased out units will be replaced with systems that use alternative refrigerants with a global-warming potential (GWP) below 750. Activities planned in the local installation and assembly subsector of stage I of the KIP and their cost breakdown are presented in table 10.

Table 10. Local installation and assembly subsector activities and their costs in stage I of the KIP for Oman as submitted

Activity	Agency	Cost (US \$)	
		First tranche	Stage I
Conduct a national survey of assemblers and installers to collect detailed information	UNEP	24,000	24,000
Training of 20 assemblers and installers on RAC good servicing practices such as safe handling, leakage control, energy efficiency and refrigerant recovery		0	8,000
One awareness-raising workshop for assemblers and installers on the latest developments and new emerging technologies in RAC manufacturing and servicing in collaboration with RAC associations		0	5,291
Provision of tools and equipment to 20 assemblers and installers, to be determined following the survey	UNIDO	0	24,000
Total (local installation and assembly)		24,000	61,291

50. Activities in the servicing sector proposed for implementation under stage I and the first tranche and their cost breakdown are presented in table 11.

⁴ The HFC consumption levels proposed under the KIP, as originally submitted, were 2,221,688 CO₂-eq tonnes for 2025 to 2031 and 1,760,306 CO₂-eq tonnes for 2032. During the project review, UNEP informed that it was an oversight to propose these targets as they were calculated using the average HFC consumption from 2022 to 2024 as the basis for reduction. Subsequently, the proposed HFC consumption levels were revised to 2,877,010 CO₂-eq tonnes from 2025 to 2031 and 2,415,624 CO₂-eq tonnes for 2032.

Table 11. Servicing sector activities and their costs in stage I of the KIP for Oman as submitted

Activity	Agency	Cost (US \$)	
		First tranche	Stage I
RAC servicing sector			
<i>Policy development and implementation</i>			
Review the existing policy and regulations, develop legal and regulatory framework for supporting HFC phase-down: - Strengthen HFC quota system and develop SOP - Further develop regulatory framework for prevention of illegal trade of HFCs - Introduce and implement the bans on imports of HFC-based new and second-hand equipment and bans on non-refillable (disposable) HFC containers - Develop a standard or SOP for safe transport and storage of HFCs and alternatives	UNEP	75,000	150,000
Introduction of the mandatory certification scheme for RAC specialists and enterprises to better service end users		25,000	25,000
Inclusion of HFC-based equipment into the scope of the leakage check system through legal measures		0	25,000
Development of legal and regulatory framework to ensure safe handling, storage, transportation of refrigerants including HFCs throughout the lifecycle refrigerant management		0	25,000
Development of green procurement policy/guidelines to promote energy-efficient and low-GWP alternative-based equipment and certified technician’s servicing in the RAC sector		0	25,000
Subtotal		100,000	250,000
<i>Training of customs officers, importers and clearance agents</i>			
Upgrade the curriculum of customs training institutes to include HFCs, new HS codes, alternative technologies, the new legislative framework, and methods for the safe handling of flammable substances	UNEP	30,000	30,000
Two workshops to train 20 trainers from main customs ports on the safe handling of flammable and toxic substances		15,000	15,000
Three workshops to train 60 customs officers on control of HFCs including risk profiling		10,000	30,000
Two workshops to train 40 enforcement officers at province level to support enforcement beyond the customs check point		10,000	20,000
Two workshops to train 40 importers and clearing/forwarding agents on new regulatory measures under stage I of the KIP, HFC data management and reporting		10,000	20,000
Two border regional/cross-border enforcement cooperation meetings with neighbouring countries		5,000	10,000
Subtotal		80,000	125,000
<i>Capacity-building of RAC/MAC servicing technicians and workshops</i>			
Training of 360 technicians (18 training workshops) on good servicing practices and the safe handling of flammable and toxic refrigerants in collaboration with local institutes	UNEP	60,000	180,000
Review and update MAC training curriculum to incorporate into the national MAC certification system		10,000	10,000
One workshop to train 10-15 trainers in the MAC sector in good service practices, leakage control and servicing with alternatives		10,000	10,000
Three workshops to train 60 MAC technicians in good service practices, including leakage control and the safe handling of alternative refrigerants		10,000	30,000
Provision of scholarships for 25 women to study university courses related to MAC and the automotive sector to build a group of female experts		10,500	17,500
Support for the development of a national RAC/MAC association		5,000	10,000

Activity	Agency	Cost (US \$)	
		First tranche	Stage I
Provision of tools and equipment ⁵ to the 360 trained/certified technicians as an incentive for participation in the training course	UNIDO	54,000	108,000
Provision of tools and equipment ⁶ to 160 registered servicing workshops to enable good servicing practices		96,000	192,000
Subtotal		255,500	557,500
Sectoral studies			
Study of consumption and use of HFCs in aerosol, solvent, firefighting and foam sectors	UNEP	0	15,000
Study of consumption and use of HFCs in the RAC local installation and assembling sector as well as potential alternative technologies for the local market		0	15,000
Subtotal		0	30,000
National recycling, recovery and reclamation (RRR) scheme			
Provide technical assistance and equipment (cylinders and bulk storage tanks) to an established RRR centre for the inclusion of HFCs	UNIDO	45,000	45,000
Subtotal		45,000	45,000
Promotion of alternative technologies			
Feasibility study on adapting the domestic AC sector to low-GWP alternative technologies	UNEP	18,064	18,064
Three sessions for dissemination of information on the latest developments and new emerging technologies with special focus on servicing in collaboration with RAC associations		15,000	45,000
Technical assistance to large end users to reduce leaks and transition into non-ODS and low-GWP alternatives by providing information on leakage reduction, improved design, and maintenance practices of RAC equipment; includes two workshops for 40 end users as well as on-site guidance for select large commercial/industrial enterprises		15,000	30,000
Technical assistance to establish a national refrigerant management system to track controlled substances through their lifecycle		40,000	40,000
Feasibility study of the final disposal of unwanted refrigerants, including review of existing regulatory framework and capacity for environmentally sound ODS management		0	20,000
Subtotal		88,064	153,064
Awareness-raising campaigns			
Targeted awareness-raising campaigns on HFCs and low-GWP technologies, including campaigns targeting women	UNEP	15,000	30,000
Information and awareness-raising workshops for economic operators (importers, distributors), service providers and compliance officers		15,000	30,000
Subtotal		30,000	60,000
Total (RAC servicing)		598,564	1,220,564
Project implementation, coordination and monitoring			
Project implementation, coordination and monitoring activities (see paragraph 51)	UNEP	51,264	128,160
Subtotal for UNEP		454,828	1,003,724
Subtotal for UNIDO		195,000	345,000
Total		649,828	1,348,724

⁵ Including flaring and swaging tools, tubing tools, wrenches, multimeter, leak detector for flammable refrigerant, personal protection, etc.

⁶ Refrigerant charging unit, recovery station for HCFCs and HFCs, leak detector for HFCs and flammable gases, refillable refrigerant recovery and service cylinders, etc.

Project implementation, coordination and monitoring

51. The modality of implementation of the HPMP will continue to be used for the KIP implementation. Project monitoring, coordination and reporting will be implemented through the NOU, which will be responsible for data collection, monitoring, and the preparation of reports, while the project management unit (PMU) will be responsible for project implementation and supporting the NOU. The total cost for the PMU is estimated at US \$128,160 for UNEP, consisting of US \$104,400 for staff and consultants, US \$6,500 for office rent, US \$9,760 for travel, US \$7,500 for meetings and workshops.

Total cost of stage I of the Kigali HFC implementation plan

52. The budget for stage I has been proposed at US \$1,410,015. The costs of activities in the refrigeration servicing sector have been proposed in line with decision 92/37. The cost for the local installation and assembly subsector is requested at US \$7.60/kg based on the best available estimate provided by UNEP.

53. The proposed activities and cost of stage I of the KIP are summarized in table 12.

Table 12. Proposed cost of activities to be implemented in stage I of the KIP for Oman (US \$)

Sector	Substances	Phase-out		Requested funding (US \$)	CE (US \$/kg)	Agency
		mt	CO ₂ -eq tonnes			
Servicing	HFC-134a, R-410A, R-404A, R-507A, R-407C, HFC-32, R-407A, HFC-245fa, HFC-236fa, R-407F, R-452A	239.33	444,949	1,220,564	5.10	UNEP/ UNIDO
Local installation and assembly	Phase-out: HFC-134a, R410A	8.06	16,433	61,291	7.60	UNEP/ UNIDO
Project implementation and monitoring	n/a	n/a	n/a	128,160	n/a	UNEP
				0		UNIDO
Total		247.39	461,382	1,410,015	5.70	n/a

Implementation plan for the first tranche

54. The first funding tranche of stage I of the KIP was submitted at a total amount of US \$673,828, as shown in tables 10 and 11 above, to be implemented between January 2026 and December 2028. Detailed information on the activities to be implemented under the first tranche, including adjustments and level of funds agreed, are presented in paragraph 66 below.

SECRETARIAT'S COMMENTS AND RECOMMENDATION**V. Comments**HFC consumption

55. Although the KIP survey collected some information on the manufacturing sector, it could not gather detailed data on the foam and firefighting subsectors due to the unavailability of industry-specific information (e.g., enterprise profiles, production and consumption statistics, and equipment specifications), compounded by the limited preparation time. Consequently, the Government decided to defer preparing a full manufacturing investment project. Instead, during stage I implementation, it will collect the necessary industry data to formulate the investment component for these subsectors.

Establishment of the “interim” baseline

56. As mentioned in paragraph 22, Oman’s HFC baseline will be calculated based on the average consumption from 2024 to 2026. Since this data is not yet available, the Government proposes using HFC consumption data from the most recent three-year period (2022–2024) to establish an “interim” baseline for setting stage I targets which is calculated as 2,877,010 CO₂-eq tonnes. Once the official 2024–2026 data becomes available in 2027, the targets in Appendix 2-A of the Agreement will be recalculated based on the HFC baseline. However, the consumption forecasts in 2025 and 2026 indicate that the reductions proposed will be sufficient to reach the 10 per cent reduction target in 2032 once the baseline is established and therefore it is expected that the agreed levels for HFC reduction, activities, and funding will remain unchanged.

Overarching strategy

57. The Government of Oman is proposing to reduce HFC consumption by 16.04 per cent from the “interim” HFC baseline. In line with decision 92/44, the Government of Oman has expressed, through UNEP, a strong commitment to supporting reductions in HFC consumption in advance of the Montreal Protocol phase-out schedule.

58. The Secretariat notes with appreciation that Oman, as an Article 5, Group 2 country, is taking early action to demonstrate its full commitment to the Kigali Amendment. This strategy is considered feasible because the required reductions can be achieved primarily within the RAC servicing sector by enforcing good practices and refrigerant RRR, as well as by promoting low-GWP alternatives. Oman’s limited HFC manufacturing capacity further enables this approach, as it avoids the significant technical and financial challenges of industrial conversion faced by other Group 2 countries.

Targets and funding

59. The HFC consumption levels proposed in the original KIP submission were much lower than the “interim” baseline. During the subsequent project review, UNEP pointed out that this was an oversight, as the targets had been calculated using the average HFC consumption from 2022 to 2024 as the basis for reduction, rather than the “interim” HFC baseline. In view of the adjustment of the targets, intermediate targets were proposed for the years before 2032. Following discussions, it was agreed to set specific intermediate reduction targets for 2030 and 2031. The Montreal Protocol phase-down schedule and the agreed maximum allowable levels of HFC consumption are presented in table 13.

Table 13: Montreal Protocol schedule and the maximum allowable consumption under the KIP

Particulars		2025	2026	2027	2028	2029	2030	2031	2032	Total
Montreal Protocol reduction schedule of Annex F substances	%	n/a	n/a	n/a	0.00	0.00	0.00	0.00	10.00	n/a
	CO ₂ -eq tonnes	n/a	n/a	n/a	2,877,010	2,877,010	2,877,010	2,877,010	2,589,309	n/a
Maximum allowable total consumption of Annex F substances	%	0.00	0.00	0.00	0.00	0.00	8.02	8.02	16.04	n/a
	CO ₂ -eq tonnes	2,877,010	2,877,010	2,877,010	2,877,010	2,877,010	2,646,317	2,646,317	2,415,624	n/a

Institutional, policy and regulatory framework

HFC licensing and quota system

60. In line with decision 87/50(g), UNEP has confirmed that Oman has established an operational licensing system for monitoring HFC imports and exports and that the HFC quota system is under development. Regarding the potential challenges in controlling HFC imports in view of the lack of a quota system, UNEP confirmed that the quota system will be effective in 2026 to control HFC imports.

Technical and cost-related issues

61. From 2026 to 2032, HFC consumption in the manufacturing, local installation and assembly subsectors is expected to grow annually by 3 and 5 per cent respectively under a business-as-usual scenario. To curb this growth, stage I of the KIP includes the phase-out of HFC-134a and R-410A in AC applications. Furthermore, stage I encompasses awareness-raising and consultative activities to inform industries about the reduction targets of the KIP.

62. The project requested separate funding to phase out HFCs in the local installation and assembly subsector at a cost-effectiveness of US \$7.60/kg. In subsequent discussions with UNEP, the focus was on monitoring the phase-out and implementing regulatory measures to ensure the sustainability of the reductions. It was agreed that the Government of Oman will closely monitor HFC consumption in this subsector and report data for the assembly subsector separately from the servicing sector in its country programme reports, starting in 2025. Furthermore, upon completion of the planned subsector activities, the Government will establish regulatory measures to prohibit the use of HFC-134a and R-410A in the onsite charging of commercial and industrial AC equipment by 2032 at the latest.

63. The Secretariat reviewed the activities and costs in line with decision 92/37(b)(iii). The cost of activities in the servicing sector was agreed at US \$1,220,564; reductions from the remaining HFC consumption eligible for funding in the servicing sector amount to 444,955 CO₂-eq tonnes, as summarized in table 14.⁷ In addition, the cost for reducing 16,431 CO₂-eq tonnes (8.06 mt) of HFCs (HFC-134a and R-410A) in the local installation and assembly subsector was agreed at US \$61,291 as proposed. Accordingly, the Government of Oman has agreed to reduce its 2032 HFC consumption to 2,415,624 CO₂-eq tonnes, representing 16.04 per cent of the country's "interim" HFC baseline for compliance.

Table 14. Agreed costs and reductions from HFC consumption eligible for funding and final target

Servicing sector		
Average HFC consumption in the servicing sector in "interim" baseline years	mt	1,087.85
	CO ₂ -eq tonnes	2,022,494
Average GWP of all HFCs consumed in the sector		1,859.17
Agreed funding	US \$	1,220,564
Agreed cost-effectiveness threshold	US \$/kg	5.10
Reductions in the servicing sector	mt	239.33
	CO ₂ -eq tonnes	444,955
Reductions from all sectors		
"Interim" HFC consumption baseline	CO ₂ -eq tonnes	2,877,010
Reductions achieved through phase-out in local installation and assembly subsector	CO ₂ -eq tonnes	16,431
Reductions achieved through activities in the servicing sector	CO ₂ -eq tonnes	444,955
Target		
Proposed target in 2032	CO ₂ -eq tonnes	2,415,624

⁷ Calculated in line with the methodology presented in annex I of document UNEP/OzL.Pro/ExCom/92/46.

Total project cost

64. At the total cost of US \$1,410,015, stage I of the KIP for Oman will result in a reduction of 461,386 CO₂-eq tonnes from the country's HFC consumption eligible for funding, as summarized in table 15.

Table 15. Agreed cost of activities to be implemented during stage I of the KIP in Oman

Sector	Agency	Substance	Phase-out to be achieved				Cost	Cost-effectiveness	
			mt		CO ₂ -eq tonnes		US \$	US \$/ kg	US \$/ CO ₂ -eq tonne
			Funded	Non-funded	Funded	Non-funded			
Local installation and assembly	UNEP and UNIDO	HFC-134a	0.61	0	872	0	61,291	7.60	3.73
		R-410A	7.45	0	15,559	0			
Servicing	UNEP and UNIDO	HFC-134a, R-410A, R-404A, R-507A, R-407C, HFC-32, R-407A, HFC-245fa, HFC-236fa, R-407F, R-452A	239.33	0	444,955	0	1,220,564	5.10	2.74
PMU	UNEP	n/a	0	0	0	0	128,160	n/a	n/a
Total			247.39	0	461,386	0	1,410,015	5.70	3.06

65. Stage I of the KIP will be implemented in three tranches.

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

66. The plan of action for the first tranche was agreed as submitted, as shown in table 16.

Table 16. Activities and their costs in the first tranche of the KIP for Oman as agreed

Activity	Agency	Cost (US \$)
RAC servicing sector		
<i>Policy development and implementation (US \$100,000)</i>		
Begin review the existing policy and regulations, develop legal and regulatory framework for supporting HFC phase-down: • Strengthen HFC quota system and develop SOP • Develop further regulatory framework for prevention of illegal trade of HFCs • Introduce and implement the ban on imports of HFC-based new and second-hand equipment and bans on non-refillable (disposable) HFC containers • Develop a standard or SOP for safe transport and storage of HFCs and alternatives	UNEP	75,000
Introduce a mandatory certification scheme for RAC specialists and enterprises to improve service quality for end users		25,000
<i>Training of customs officers, importers and clearance agents (US \$80,000)</i>		
Upgrade the curriculum of customs training institutes to include HFCs, new HS codes, alternative technologies, the new legislative framework, and methods for the safe handling of flammable substances	UNEP	30,000
One workshop to train 10 trainers on the safe handling of flammable and toxic substances		15,000
One workshop to train 20 customs officers on control of HFCs including risk profiling		10,000
One workshop to train 20 enforcement officers at province level to support enforcement beyond the customs check point		10,000

Activity	Agency	Cost (US \$)
One workshop to train 20 importers and clearing/forwarding agents on new regulatory measures under stage I of the KIP, HFC data management and reporting		10,000
One border dialogue/cross-border enforcement cooperation meeting with neighbouring countries		5,000
Capacity-building of RAC/MAC servicing technicians and workshops (US \$255,500)		
Six workshops to train 120 technicians on good servicing practices and the safe handling of flammable and toxic refrigerants in collaboration with local institutes	UNEP	60,000
Review and update MAC training curriculum to incorporate into the national MAC certification system		10,000
One workshop to train 10-15 trainers in MAC sector in good service practices, leakage control and servicing with alternatives		10,000
One workshop to train 20 MAC technicians in good service practices, including leakage control and the safe handling of alternative refrigerants		10,000
Provision of scholarships for 15 women to study university courses related to MAC and the automotive sector		10,500
Support for the development of a national RAC/MAC association		5,000
Provision of tools and equipment to 300 trained/certified technicians as an incentive for participation in the training course		UNIDO
Provision of tools and equipment to 80 registered servicing workshops to enable good servicing practices	96,000	
National RRR scheme (US \$45,000)		
Develop a guideline as part of technical assistance to an established RRR centre for the inclusion of HFCs	UNIDO	45,000
Promotion of alternative technologies (US \$88,064)		
One feasibility study on adapting the domestic AC sector to low-GWP alternative technologies	UNEP	18,064
One session for dissemination of information on the latest development and new emerging technologies with special focus on servicing in collaboration with RAC associations		15,000
Begin technical assistance to large end users to reduce leaks and transition into non-ODS and low-GWP alternatives by providing information on leakage reduction, improved design, and maintenance practice of RAC equipment		15,000
Technical assistance to establish a national refrigerant management system to track controlled substances through their lifecycle		40,000
Awareness-raising campaigns (US \$30,000)		
One targeted awareness-raising campaign on HFCs and low-GWP technologies, including campaigns targeting women	UNEP	15,000
Information and awareness-raising workshops for economic operators (importers, distributors), service providers and compliance officers		15,000
Subtotal (RAC servicing)		598,564
Local installation and assembly sector		
Conduct a national survey of assemblers and installers to collect detailed information	UNEP	24,000
Subtotal (local installation and assembly)		24,000
Project implementation, coordination and monitoring		
Project implementation, coordination and monitoring activities, including US \$41,760 for staff and consultants, US \$2,600 for office rent, US \$3,904 for travel, and US \$3,000 for meetings and workshops	UNEP	51,264
Subtotal for UNEP		478,828
Subtotal for UNIDO		195,000
Total		673,828

Exemption for high-ambient temperature parties

67. Oman is a country eligible for the high-ambient temperature exemption as per paragraph 26 of decision XXVIII/2 of the Meeting of the Parties. The Secretariat notes that Oman has not requested it and has expressed, through UNEP, its firm commitment to not doing so in the future.

Co-financing

68. The Government of Oman's co-financing will be in the form of in-kind contributions, including the provision of office space, development of policies and regulatory measures, and oversight of the implementation process. The Government remains committed to exploring co-financing opportunities throughout stage I.

2025–2027 business plan of the Multilateral Fund

69. UNEP and UNIDO are requesting US \$1,410,015, plus agency support costs, for the implementation of stage I of the KIP for Oman. The funding for the KIP has not been included in the 2025 to 2027 business plan; instead, it is included in the consolidated business plan for 2026 to 2028. The total value of US \$1,384,013, including agency support costs, requested for the period 2025-2028, is US \$568,405 above the amount in the 2026-2028 business plan.

Gender policy implementation

70. In line with decisions 84/92(d), 90/48(c) and 92/40(b) and the Multilateral Fund gender policy, women's engagement was considered throughout the project planning process. Activities are planned to collect and monitor disaggregated data, organize related training sessions and follow up on any discussions and recommendations, involve women in awareness-raising activities, ensure women's involvement in training and informational materials, provide scholarships to women pursuing careers in RAC, and monitor and report on the implementation of the gender policy throughout the project. The scholarship activity is designed specifically for the automotive sector to invest in the training and education of female MAC technicians, supervisors, and engineers, and to build a foundation of female experts and policy makers to represent and advocate for women in MAC.

Sustainability of the HFC phase-down and assessment of risks

71. The phase-out in the local installation and assembly subsectors will be sustained by a ban on using HFC-134a and R-410A to charge onsite installed equipment. Additional regulatory measures, including an HFC licensing and quota system, prevention of illegal HFC trade, a ban on importing new and second-hand HFC-based equipment, and a ban on non-refillable HFC containers, will limit imports of HFCs and HFC-based equipment. This will enable the country to maintain the overall HFC reduction. Furthermore, training and capacity-building for the servicing sector, including refrigerant leakage control and RRR as well as safe handling of flammable refrigerants, will mitigate risks to the sustainability of the national phase-down.

72. The major potential risks to the successful implementation of the KIP include a lack of low-GWP alternatives or a slow introduction of alternative technologies to the market, the proliferation of high-GWP technologies, high HFC consumption growth that would require larger reductions than can be feasibly achieved, insufficient capacity for servicing HFC- and low-GWP-based equipment, and a lack of stakeholder participation. To address these risks, the KIP has incorporated activities such as developing regulations to control the import of high-GWP HFCs, conducting awareness-raising campaigns to promote low-GWP technologies, motivating stakeholder involvement, and providing training and technical assistance. The monitoring and evaluation mechanisms established during the HPMP will be used to track the KIP's progress, and the NOU will submit annual progress and financial reports.

Impact on the climate

73. The activities proposed, including regulatory measures to control HFC imports and efforts to promote low-GWP alternatives, refrigerant recovery and reuse, as well as the HFC phase-out in the local installation and assembly subsector, 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 2032, Oman will have reduced its emissions by approximately 461,386 CO₂-eq tonnes of HFCs, calculated as the difference between the HFC baseline for compliance and the 2032 target, assuming that all consumed HFCs would eventually have been emitted.

Draft Agreement

74. A draft Agreement between the Government of Oman and the Executive Committee for stage I of the KIP is contained in annex I to the present document. The Agreement will be revised once the consumption data for 2024 to 2026 is reported and the actual baseline is established.

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

75. Annex II summarizes the simultaneous implementation of activities under the HPMP and the KIP.

VI. Recommendation

76. The Executive Committee may wish to consider:

- (a) Approving, in principle, stage I of the Kigali HFC implementation plan (KIP) for Oman for the period 2025–2032 to reduce HFC consumption by 16.04 per cent of the country's "interim" baseline as defined in paragraph 22 of document UNEP/OzL.Pro/ExCom/97/67, in the amount of US \$1,560,357, consisting of US \$1,041,015, plus agency support costs of US \$124,512, for UNEP and US \$369,000, plus agency support costs of US \$25,830, for UNIDO;
- (b) Noting that 461,386 CO₂-equivalent tonnes of HFCs will be deducted from the starting point for sustained aggregate reductions in HFC consumption that will be established on the basis of guidance provided by the Executive Committee;
- (c) Further noting that the Government of Oman will establish regulatory measures to prohibit the use of HFC-134a and R-410A in the onsite charging of commercial and industrial air-conditioning equipment by 2032 at the latest;
- (d) Approving the draft Agreement between the Government of Oman and the Executive Committee for the reduction in consumption of HFCs in accordance with stage I of the KIP, contained in annex I to the present document;
- (e) Requesting the Fund Secretariat, once the country's baseline is established, to update Appendix 2-A of the Agreement to include the revised figures for the Montreal Protocol HFC consumption limits and maximum allowable consumption for stage I of the KIP, and to notify the Executive Committee of the resulting levels of maximum allowable consumption, with any necessary adjustments being made at the first meeting in 2028; and
- (f) Approving the first tranche of stage I of the KIP for Oman and the corresponding tranche implementation plan, in the amount of US \$744,749, consisting of US \$478,828, plus agency support costs of US \$57,271, for UNEP and US \$195,000, plus agency support costs of US \$13,650, for UNIDO.

Annex I

**DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF OMAN
AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND
FOR THE REDUCTION IN CONSUMPTION OF HYDROFLUOROCARBONS
IN ACCORDANCE WITH STAGE I OF THE KIGALI HFC IMPLEMENTATION PLAN
(Period: 2025–2032)**

Purpose

1. This Agreement represents the understanding of the Government of Oman (“the Country”) and the Executive Committee with respect to the reduction of controlled use of Annex F substances set out in Appendix 1-A (“The Substances”) to a sustained level of 2,415,624 CO₂-equivalent (CO₂-eq) tonnes by 1 January 2032 in compliance with the Montreal Protocol schedule and the terms of this Agreement. The Agreement shall be adjusted once when the consumption for the year 2024–2026 is reported and the HFC baseline is established.
2. The Country agrees to meet the annual consumption limits of Annex F substances as set out in row 1.2 of Appendix 2-A (“The Targets, and Funding”) in this Agreement as well as in the Montreal Protocol reduction schedule for Annex F substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of Annex F substances that exceeds the level defined in row 1.2 of Appendix 2-A as the final reduction step under this Agreement for Annex F substances specified in Appendix 1-A, and in respect to any consumption of Annex F substances that exceeds the level defined in row 4.1.3 (remaining consumption eligible for funding).
3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees, in principle, to provide the funding set out in row 3.1 of Appendix 2-A to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A (“Funding Approval Schedule”).
4. The Country agrees to implement this Agreement in accordance with stage I of the Kigali HFC implementation plan (“the Plan”) as approved. In accordance with subparagraph 5(b) of this Agreement, the Country will accept independent verification of the achievement of the annual consumption limits of Annex F substances set out in row 1.2 of Appendix 2-A of this Agreement. The aforementioned verification will be commissioned by the relevant bilateral or implementing agency.

Conditions for funding release

5. The Executive Committee will only provide the Funding, in accordance with the Funding Approval Schedule, when the Country satisfies the following conditions at least 10 weeks in advance of the applicable Executive Committee meeting set out in the Funding Approval Schedule:
 - (a) That the Country has met the Targets set out in row 1.2 of Appendix 2-A for all relevant years. Relevant years are all years since the year in which this Agreement was approved. Years for which there are no due country programme implementation reports at the date of the Executive Committee meeting at which the funding request is being presented are exempted;
 - (b) That the meeting of these Targets has been independently verified for all relevant years, unless the Executive Committee decided that such verification would not be required;

- (c) That the Country had submitted a Tranche Implementation Report in accordance with Appendix 4-A (“Format of Tranche Implementation Reports and Plans”) covering each previous calendar year; that it had achieved a significant level of implementation of activities initiated with previously approved tranches; and that the rate of disbursement of funding available from the previously approved tranche was more than 20 per cent; and
- (d) That the Country has submitted a Tranche Implementation Plan in accordance with Appendix 4-A covering each calendar year until and including the year for which the Funding Approval Schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.

Monitoring

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A (“Monitoring Institutions and Roles”) will monitor and report on implementation of the activities in the previous Tranche Implementation Plans in accordance with their roles and responsibilities set out in the same appendix.

Flexibility in the reallocation of funds

7. The Executive Committee agrees that the Country may have the flexibility to reallocate part or all approved funds, according to the evolving circumstances, to achieve the smoothest reduction of consumption and phase-down of Annex F substances specified in Appendix 1-A, in accordance with the following considerations:

- (a) Reallocations categorized as major changes must be documented in advance, either in a Tranche Implementation Plan as foreseen in subparagraph 5(d) above, or as a revision to an existing Tranche Implementation Plan to be submitted 10 weeks prior to any meeting of the Executive Committee, for its approval. Major changes would relate to:
 - (i) Issues potentially concerning the rules and policies of the Multilateral Fund;
 - (ii) Changes that would modify any clause of this Agreement;
 - (iii) Changes in the annual levels of funding allocated to the individual bilateral or implementing agencies for the different tranches;
 - (iv) Provision of funding for activities not included in the current endorsed Tranche Implementation Plan, or removal of an activity in the Tranche Implementation Plan, with a cost greater than 30 per cent of the total cost of the last approved tranche;
 - (v) Changes in alternative technologies, on the understanding that any submission for such a request would identify the associated incremental costs, the potential impact on the climate, and any differences in CO₂-eq tonnes to be phased down if applicable, as well as confirm that the Country agrees that potential savings related to the change of technology would accordingly decrease the overall funding level under this Agreement;
- (b) Reallocations not categorized as major changes may be incorporated into the approved Tranche Implementation Plan, under implementation at the time, and reported to the Executive Committee in the subsequent Tranche Implementation Report;

- (c) Any enterprise included in the Plan that would be found to be ineligible under the policies of the Multilateral Fund (i.e., due to foreign ownership or establishment after the applicable cut off date) would not receive financial assistance. This information would be reported as part of the Tranche Implementation Plan; and
- (d) Any remaining funds held by the bilateral or implementing agencies or the Country under the Plan will be returned to the Multilateral Fund upon completion of the last tranche foreseen under this Agreement.

8. Specific attention will be paid to the execution of activities in the refrigeration servicing sector included in the Plan, in particular that the Country may use the flexibility available under this Agreement to address specific needs that might arise during project implementation.

Bilateral and implementing agencies

9. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. UNEP has agreed to be the lead implementing agency (the “Lead IA”) and UNIDO has agreed to be the cooperating implementing agency (the “Cooperating IA”) under the lead of the Lead IA in respect of the Country’s activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of the Lead IA and/or Cooperating IA taking part in this Agreement.

10. The Lead IA will be responsible for ensuring coordinated planning, implementation and reporting of all activities under this Agreement, including but not limited to the independent verification as per subparagraph 5(b). The Cooperating IA will support the Lead IA by implementing the Plan under the overall coordination of the Lead IA. The roles of the Lead IA and Cooperating IA are contained in Appendix 6-A and Appendix 6-B, respectively. The Executive Committee agrees, in principle, to provide the Lead IA and the Cooperating IA with the fees set out in rows 2.2 and 2.4 of Appendix 2-A.

Non-compliance with the Targets in the Agreement

11. Should the Country, for any reason, not meet the Targets for the elimination of Annex F substances set out in row 1.2 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amount set out in Appendix 7-A (“Reductions in Funding for Failure to Comply”) in respect of each CO₂-eq kg of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement and take related decisions. Once decisions are taken, the specific case of non-compliance with this Agreement will not be an impediment for the provision of funding for future tranches as per paragraph 5 above.

12. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decisions that may affect the funding of any other consumption sector projects or any other related activities in the Country.

13. The Country will comply with any reasonable request of the Executive Committee, the Lead IA and the Cooperating IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the Cooperating IA with access to the information necessary to verify compliance with this Agreement.

Date of completion

14. The completion of the Plan and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption level has been specified in Appendix 2-A. Should at that time there still be activities that are outstanding, and which were foreseen in the last Tranche Implementation Plan and its subsequent revisions as per subparagraph 5(d) and paragraph 7, the completion of the Plan will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per subparagraphs 1(a), 1(b), and 1(d) of Appendix 4-A will continue until the time of the completion of the Plan unless otherwise specified by the Executive Committee.

Validity

15. All conditions set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.

16. This Agreement may be modified or terminated only by mutual written agreement of the Country and the Executive Committee of the Multilateral Fund.

APPENDICES

APPENDIX 1-A: THE SUBSTANCES

Substances	Starting point for aggregate reductions in consumption (CO ₂ -eq tonnes)
HFCs	TBD

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars		2025	2026	2027	2028	2029	2030	2031	2032	Total
1.1	Montreal Protocol reduction schedule of Annex F substances (interim)	%	n/a	n/a	n/a	freeze	freeze	freeze	freeze	10	n/a
		CO ₂ -eq tonnes	n/a	n/a	n/a	2,877,010	2,877,010	2,877,010	2,877,010	2,589,309	n/a
1.2	Maximum allowable total consumption of Annex F substances	Reduction in %	0.0	0.0	0.0	0.0	0.0	8.0	8.0	16.0	n/a
		CO ₂ -eq tonnes	2,877,010	2,877,010	2,877,010	2,877,010	2,877,010	2,646,317	2,646,317	2,415,624	n/a
2.1	Lead IA (UNEP) agreed funding (US \$)		478,828	0	0	396,555	0	165,632			1,041,015
2.2	Support costs for Lead IA (US \$)		57,271			47,430	0	19,811			124,512
2.3	Cooperating IA (UNIDO) agreed funding (US \$)		195,000	0	0	174,000	0	0	0		369,000
2.4	Support costs for Cooperating IA (US \$)		13,650	0	0	12,180	0	0	0		25,830
3.1	Total agreed funding (US \$)		673,828	0	0	570,555	0	165,632	0		1,410,015
3.2	Total support costs (US \$)		70,921			59,610	0	19,811	0		150,342
3.3	Total agreed costs (US \$)		744,749			630,165	0	185,443	0		1,560,357

Row	Particulars	2025	2026	2027	2028	2029	2030	2031	2032	Total
4.1.1	Total phase-down of HFCs agreed to be achieved under this Agreement (CO ₂ -eq tonnes)									461,386
4.1.2	Phase-out of HFCs to be achieved through previously approved projects (CO ₂ -eq tonnes)									0
4.1.3	Remaining eligible consumption of HFCs (CO ₂ -eq tonnes)									TBD

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval at the first meeting of the year specified in Appendix 2-A.

APPENDIX 4-A: FORMAT OF THE TRANCHE IMPLEMENTATION REPORTS AND PLANS

1. The submission of the Tranche Implementation Report and Plans for each tranche request will consist of four parts:

- (a) A narrative report, with data provided by tranche, describing the progress achieved since the previous report, reflecting the situation of the Country in regard to phase-down of Annex F substances, how the different activities contribute to it, and how they relate to each other, including, where applicable, activities related to energy efficiency approved in the context of HFC phase-down pursuant to decision 91/65. The report should include the amount of Annex F substances consumption reduced as a direct result of the implementation of activities, by substance, the alternative technology used and the related phase in of alternatives, to allow the Secretariat to inform the Executive Committee on the resulting change in climate relevant emissions. The report should also include quantitative information on the activities implemented and further highlight the successes, experiences, and challenges related to the different activities included in the Plan, reflecting any changes in the circumstances in the Country, and providing other relevant information. The report should also include information on and justification for any changes vis-à-vis the previously submitted Tranche Implementation Plan(s), such as delays, use of flexibility for the reallocation of funds during implementation of a tranche as provided for in paragraph 7 of this Agreement, or other changes;
- (b) An independent verification report on the Plan's results and the consumption of Annex F substances, as per subparagraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification of consumption data must be provided with each tranche request, covering all relevant years for which a verification report has not yet been acknowledged by the Committee, as specified in subparagraph 5(a) of the Agreement;
- (c) A written description of the activities to be undertaken during the period covered by the requested tranche including quantitative information, highlighting implementation milestones, the time of completion and the interdependence of the activities, and taking into account experiences made and progress achieved in the implementation of earlier tranches; the data in the Plan will be provided by calendar year. The description should include a reference to the overall Plan and progress achieved, as well as any possible changes to the overall Plan that are foreseen. The description should also specify and explain in detail such changes to the overall Plan. This description of future activities can be submitted as a part of the same document as the narrative report under subparagraph 1(a) above; and
- (d) An Executive Summary of about five paragraphs, summarizing the information contained in subparagraphs 1(a) to 1(c) above.

APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES

1. The national ozone unit (NOU), under the Environment Authority in the Country, is responsible for monitoring the progress of implementation of activities in the Plan.
2. The monitoring will be conducted during the implementation of the Plan to ensure efficient and effective implementation; overall project coordination; stakeholder engagement and coordination; smooth implementation of activities planned under various tranches; delivery of training and other expected outcomes; and facilitation of the HFC consumption verification undertaken by the Lead IA. The NOU will be responsible for reporting on project progress with the support of the implementing agencies.
3. The Environment Authority in the Country will be responsible for the sustainability of consumption reduction targets achieved through the Agreement.

APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY

1. The Lead IA will be responsible for a range of activities, including at least the following:
 - (a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's Plan;
 - (b) Assisting the Country in the preparation of the Tranche Implementation Reports and Plans as per Appendix 4-A;
 - (c) Providing independent verification to the Executive Committee that the Targets have been met and associated tranche activities have been completed as indicated in the Tranche Implementation Plan, consistent with Appendix 4-A;
 - (d) Ensuring that the experiences and progress are reflected in the updates to the overall Plan and in the future Tranche Implementation Plans, consistent with subparagraph 1(c) of Appendix 4-A;
 - (e) Fulfilling the reporting requirements of the Tranche Implementation Reports and Plans and of the overall Plan as specified in Appendix 4-A for submission to the Executive Committee including the activities implemented by the Cooperating IA;
 - (f) In the event that the last funding tranche is requested one or more years prior to the last year for which a consumption target had been established, annual Tranche Implementation Reports and, where applicable, verification reports on the current stage of the Plan should be submitted until all activities foreseen had been completed and HFC consumption targets had been met;
 - (g) Ensuring that appropriate independent technical experts carry out the technical reviews;
 - (h) Carrying out the required supervision missions;
 - (i) Ensuring the presence of an operating mechanism to allow for an effective and transparent implementation of the Tranche Implementation Plan and accurate data reporting;
 - (j) Coordinating the activities of the Cooperating IA and ensuring the appropriate sequence of activities;
 - (k) In case of reductions in funding for failure to comply in accordance with paragraph 11 of the Agreement, to determine, in consultation with the Country and the Cooperating IA, the

allocation of the reductions to the different budget items and to the funding of the Lead IA and each Cooperating IA;

- (l) Ensuring that disbursements made to the Country are based on the use of the indicators;
- (m) Providing assistance with the policy, management and technical support when required;
- (n) Reaching consensus with the Cooperating IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan; and
- (o) Timely releasing funds to the Country/participating enterprises for completing the activities related to the project.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent entity to carry out the verification of the Plan's results and of the consumption of Annex F substances mentioned in Appendix 1-A, as per subparagraph 5(b) of the Agreement and subparagraph 1(b) of Appendix 4-A.

APPENDIX 6-B: ROLE OF THE COOPERATING IMPLEMENTING AGENCIES

1. The Cooperating IA will be responsible for a range of activities. These activities are specified in the Plan, including at least the following:

- (a) Providing assistance for policy development when required;
- (b) Assisting the Country in the implementation and assessment of the activities funded by the Cooperating IA, and referring to the Lead IA to ensure a coordinated sequence of activities;
- (c) Providing reports to the Lead IA on these activities, for inclusion in the consolidated reports as per Appendix 4-A; and
- (d) Reaching consensus with the Lead IA on any planning, coordination and reporting arrangements required to facilitate the implementation of the Plan.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY WITH THE TARGETS IN THE AGREEMENT

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$6.11 per CO₂-eq tonne of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the Target specified in row 1.2 of Appendix 2-A has not been met, on the understanding that the maximum funding reduction would not exceed the funding level of the tranche being requested. Additional measures might be considered in cases where non-compliance extends for two consecutive years. Where the Country has failed to comply with the Agreement due to illegal trade, the reduction in funding would not be applied if the illegally traded controlled substances are seized and subsequently confiscated, destroyed, exported, or returned to the country of origin.

Annex II

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

Category of activity	HPMP – stage III		KIP – stage I		HPMP+KIP combined cost (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
Local installation and assembly					
Local installation and assembly			National survey of assemblers and installers Train 20 assemblers and installers on RAC good servicing practices One awareness-raising workshop for assemblers and installers on the latest developments and technologies in RAC manufacturing and servicing Provide tools and equipment to 20 assemblers and installers	61,291	61,291
RAC servicing					
Strengthen legal framework	Review existing and prepare new legislation to support HCFC phase-out: • Policy for mandatory leak detection • Ban on imports of second-hand HCFC-based equipment • Guidelines for labelling of containers for controlled substances Review and update the e-licensing system Provide technical support to the NOC Public awareness campaigns on regulations relating to the Montreal Protocol, the quota and licensing system, and best refrigerant servicing practices Outreach for emerging technologies in the fisheries sector	170,000	Review existing and prepare new legislation to support HFC phase-down: • Prevent illegal trade of HFCs • Ban import of HFC-based new and second-hand equipment and on non-refillable HFC cylinders • Improve standards for safe transport/storage of HFCs and alternatives Strengthen HFC quota system Introduce mandatory certification scheme for RAC specialists and enterprises Include HFC-based equipment into leakage check system Strengthen control mechanisms and refrigerant management regulations Develop “green procurement” guidelines	250,000	420,000
Customs capacity-building	Train for 60 customs and enforcement officers Provide 12 refrigerant identifiers	73,000	Train 60 customs officers on Montreal Protocol and HFC control Upgrade customs training curriculum to include HFCs, low-GWP refrigerants, new HS codes	125,000	198,000

Category of activity	HPMP – stage III		KIP – stage I		HPMP+KIP combined cost (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
			Train customs trainers Train 40 enforcement officers and 40 importers and clearance agents Two border dialogues with neighbouring countries		
Technician capacity-building and support to RAC sector	Update technician training curricula Train 1,600 RAC technicians on good refrigeration practices Develop specifications for use and installation of equipment containing flammable refrigerants Provide six sets of equipment to training centres Implement the technician certification programme Provide leak detectors to 700 certified technicians Study to promote the minimum-leakage programme, including manual and website Study on energy efficiency and economic benefits of the minimum-leakage initiative	890,000	Train 360 RAC technicians on good servicing practices Update MAC training curriculum to incorporate into the national MAC certification system Train 10-15 MAC trainers and 60 MAC technicians in good servicing practices Provide MAC-related university scholarships for 25 women Provide tools and equipment to the 360 trained/certified technicians Provision of tools and equipment to 160 registered servicing workshops Support development of a national RAC/MAC association	557,500	1,447,500
Strengthen RRR network	Guidelines for refrigerant RRR for technicians and end users Study to establish a sustainable RRR infrastructure Provision of equipment to four existing centres (reclamation units, refrigerant identifiers, recovery cylinders) Awareness-raising on the RRR network	112,000	Provide technical assistance and equipment (cylinders and bulk storage tanks) to an established RRR centre for the inclusion of HFCs	45,000	157,000
Sector-specific assistance			Study of consumption and use of HFCs in aerosol, solvent, firefighting and foam sectors Study of consumption and use of HFCs in the RAC assembling sector for on-site charging and technologies relevant to the local market	30,000	30,000
Promote alternative refrigerants			Feasibility study on adapting the domestic AC sector to low-GWP alternative technologies Three sessions on latest developments and	153,064	153,064

Category of activity	HPMP – stage III		KIP – stage I		HPMP+KIP combined cost (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
			technologies in collaboration with RAC associations Workshops and on-site guidance for 40 large end users to reduce leaks and transition into alternatives Establish a national refrigerant management system to track controlled substances Feasibility study on the disposal of unwanted refrigerants and develop technical roadmap for ODS destruction		
Gender mainstreaming	One workshop to develop indicator gender indicators for 20 participants Hire a gender expert to support the gender mainstreaming activities	21,364			21,364
Awareness			Targeted awareness-raising campaigns on HFCs and low-GWP technologies Information workshops for importers, distributors, service providers and compliance officers	60,000	60,000
Coordination and monitoring					
PMU	Coordination, monitoring and evaluation activities	140,472	Coordination, monitoring and evaluation activities	128,160	268,632
Total		1,406,836		1,410,015	2,816,851
Percentage of total (%)		50		50	100