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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-sixth Meeting
Montreal, 26-30 May 2025
Item 9(c) and (d) of the provisional agenda¹

PROJECT PROPOSALS: MOROCCO

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

Phase-out

- | | | | |
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| • | HCFC phase-out management plan (stage II, fourth tranche) | UNIDO | Blanket approval |
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Phase-down

- | | | | |
|---|---|-------|--------------------------|
| • | Kigali HFC implementation plan (stage I, first tranche) | UNIDO | Individual consideration |
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¹ UNEP/OzL.Pro/ExCom/96/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Morocco

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage II)	UNIDO (lead)	88 th	67.5% phase-out by 2025

(II) LATEST ARTICLE 7 DATA (Annex C, Group I)	Year: 2023	17.30 ODP tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2023	
Chemical	Aerosol	Foam	Fire-fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					17.30				17.30
HCFC-141b pre-blended polyols		11.47							11.47

(IV) CONSUMPTION DATA (ODP tonnes)			
2009–2010 baseline:	51.35	Starting point for sustained aggregate reductions:	67.79
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved:	51.10	Remaining:	16.69

(V) ENDORSED BUSINESS PLAN		2025	2026	2027	Total
UNIDO	ODS phase-out (ODP tonnes)	1.19	0.00	0.00	1.19
	Funding (US \$)	84,564	0	0	84,564

(VI) PROJECT DATA			2021	2022	2023	2024	2025	Total
Montreal Protocol consumption limits (ODP tonnes)			33.38	33.38	33.38	33.38	16.69	n/a
Maximum allowable consumption (ODP tonnes)			33.38	25.33	25.33	25.33	16.69	n/a
Funding agreed in principle (US \$)	UNIDO	Project costs	370,000	344,500	305,000	0	79,032	1,098,532
		Support costs	25,900	24,115	21,350	0	5,532	76,897
Funds approved by ExCom (US \$)		Project costs	370,000	344,500	305,000	0	0	1,019,500
		Support costs	25,900	24,115	21,350	0	0	71,365
Total funds recommended for approval at this meeting (US \$)		Project costs	0	0	0	0	79,032	79,032
		Support costs	0	0	0	0	5,532	5,532

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Morocco, UNIDO as the designated implementing agency, has submitted a request for funding for the fourth and final tranche of stage II of the HCFC phase-out management plan (HPMP), in the amount of US \$79,032, plus agency support costs of US \$5,532.² The submission includes a progress report on the implementation of the third tranche, the verification report on HCFC consumption for 2023 to 2024, and the tranche implementation plan for 2025 to 2026.

Report on HCFC consumption

2. The Government of Morocco reported a consumption of 17.30 ODP tonnes of HCFCs in 2023, which is 66 per cent below the country's HCFC baseline for compliance. The Article 7 data for 2024 has not been reported yet. The 2020–2024 HCFC consumption is shown in table 1.

Table 1. HCFC consumption in Morocco (2020–2024 Article 7 data)

HCFC	2020	2021	2022	2023	2024*	Baseline
Metric tonnes (mt)						
HCFC-22	459.22	320.41	360.72	314.55	312.69	705.45
Total (mt)	459.22	320.41	360.72	314.55	312.69	819.54**
HCFC-141b in imported pre-blended polyols***	104.30	104.30	104.30	104.30	104.30	71.82****
ODP tonnes						
HCFC-22	25.26	17.62	19.84	17.30	17.20	38.80
Total (ODP tonnes)	25.26	17.62	19.84	17.30	17.20	51.35**
HCFC-141b in imported pre-blended polyols***	11.47	11.47	11.47	11.47	11.47	7.90****

* Data from the verification report

** The baseline includes 114.09 mt (12.55 ODP tonnes) of HCFC-141b, consumption of which has been zero since 2014

*** Country programme (CP) data

**** Average consumption between 2007 and 2009

3. The HCFC consumption in Morocco has continued to decline due to the activities implemented under the HPMP, particularly the ban on the import of HCFC-141b (pure) since 2015, and the introduction of alternative technologies. The reduction in 2021 was due to economic instability in the country and the impact of the COVID-19 pandemic, while the increase in 2022 reflected the recovery of economic activities from the pandemic. The use of HCFC-141b contained in imported pre-blended polyols is an estimate only but has remained at a stable level since 2020. A planned ban is to be enforced once the project for phasing out HCFC-141b contained in imported pre-blended polyols is complete.

Country programme implementation report

4. The Government of Morocco reported HCFC sector consumption data under the 2023 country programme (CP) implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

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 was correct, with a consumption of 312.69 mt of HCFC-22 in 2024 (as shown in table 1 above). The verification concluded that the Government of Morocco has an operational licensing and quota system for HCFC imports and exports and is in compliance with the maximum allowable consumption targets in the Agreement with the Executive Committee. The report

² As per the letter of 17 March 2025 from the Ministry of Industry and Commerce of Morocco to UNIDO.

recommendations mainly include closely monitoring the imports for 2025 to ensure compliance, as the quota is very close to the maximum allowable consumption; updating HCFC-22 import statistics regularly on the public platform; and strengthening export-data reporting.

Progress report on the implementation of the third tranche of stage II of the HCFC phase-out management plan

Legal framework

6. The Government of Morocco has been implementing the licensing and quota system to control the import of HCFCs. An electronic licensing system and a ban on HCFC-141b (pure) have been implemented since 2015. Morocco ratified the Kigali Amendment on 22 April 2022 and has submitted its Kigali HFC implementation plan to this meeting, which is presented in paragraphs 29 to 76 below.

7. The Government has completed the development of the tariff codes for specialized HCFC-22-based equipment. The tariff code will be transferred to the customs department and applied in 2025 to facilitate the implementation of the licensing system for HCFC-22-based equipment. A draft code of practice for the RAC servicing sector has been produced and is expected to be approved by the relevant authority in the second quarter of 2025. The establishment of a certification system for RAC technicians is in progress. The National Ozone Unit (NOU) held a workshop and five work meetings with key stakeholders including the National entity for standardization (IMANOR), the National office for professional training (OFPPT), the local RAC association (AMPF), the National agency for energy efficiency (AMEE), and representatives of the private sector. The certification system is expected to be in operation from 2026.

Manufacturing sector

8. Stage II includes an umbrella project for the phase-out of HCFC-141b contained in pre-blended polyols in the manufacture of polyurethane (PU) rigid foam in four enterprises (Métaux Profilage Isolation (MPI), CF Loudaya, Indisol, and Roto Moulage du Sud (RMS)). The implementation of the project is progressing. The contract was signed with MPI for the conversion of the manufacturing line, a technology provider was selected, and equipment is expected to be delivered by mid-2025. The conversion is expected to be completed by the end of 2025. A study tour for the other three smaller manufacturers is being organized as part of the technical assistance to be provided and is expected to be concluded in 2025.

Refrigeration servicing sector

9. A draft of updated training manuals on good practices incorporating the new codes of practice for the certification system has been produced, reviewed by experts and is expected to be validated in the first half of 2025. The purchased tools and equipment have been delivered to six training centres. Four train-the-trainer sessions have been held for a total of 54 trainers (including six women). A total of 29 trainers (including one woman) received certification on the European F-gas regulation during two certification sessions. These candidates will be trainers in the future Moroccan certification system once it comes into force.

10. A first draft of the study for the introduction of a recovery, recycling and reclamation (RRR) system was finalized in November 2024 and the final version of the study is expected in 2025. A study tour to Helsinki, Finland was organized in 2023 for the local expert responsible for the study and a representative of the NOU staff. The tour included visits to a RRR facility, a destruction facility, and a meeting with representatives of the Finnish Ministry of Environment. The experience and knowledge gained from the study tour have been incorporated into the first draft of the study on implementing a RRR system in Morocco.

11. Events were organized for World Refrigeration Day in 2023 and 2024, which were attended by 380 national and international representatives from the RAC sector (10 per cent were women). In 2024, a side event was organized on women in the refrigeration sector. An awareness-raising event was also organized for 50 people in collaboration with the Moroccan Association of Refrigeration Professionals, focusing on women's involvement in the HCFC phase-out and the activities in the RAC sector.

12. Other activities planned for the tranche including training 250 RAC servicing technicians; purchasing 50 sets of recovery machines and preparing a survey on the use of refrigerants in the fisheries sector, will be conducted during the fourth tranche implementation.

Project implementation and monitoring

13. Project coordination and management for which US \$40,000 had been allocated in the third tranche, have been performed by the NOU with the support of an international expert in the implementation of activities. As of March 2025, the amount of US \$30,230 was disbursed (US \$17,230 for staff and consultant; US \$4,000 for travel; US \$3,000 for meetings; and US \$6,000 for verification report).

Level of fund disbursement

14. As of March 2025, of the US \$1,019,500 approved so far, including an umbrella project for the phase-out of HCFC-141b contained in pre-blended polyols approved at the 91st meeting as the second tranche of the HPMP, US \$377,605 had been disbursed, as shown in table 2. The balance of US \$641,895 will be disbursed from 2025 to 2026.

Table 2. Financial report of stage II of the HPMP for Morocco (US \$)

Funding tranche	Funds approved	Funds disbursed	Disbursement rate (%)	Fund balance
First	370,000	237,875	64	132,125
Second (investment project)	344,500	64,500	19	280,000
Third	305,000	75,230	25	229,770
Total	1,019,500	377,605	37	641,895

Implementation plan for the fourth and final tranche of stage II of the HCFC phase-out management plan

15. With the funding of the final tranche, the following activities will be implemented by UNIDO between June 2025 and December 2026:

- (a) Training 200 RAC technicians (with a target of 20 per cent women) in good servicing practices for managing and handling refrigerants, leakage control, refrigerant recovery, and servicing equipment using flammable refrigerants (US \$65,000); and
- (b) Project monitoring, coordination and reporting (US \$14,032), which will be allocated for a consultant (US \$6,000), travel (US \$2,032), and verification report (US \$6,000).

16. The activities that have been planned for the previous tranches that have not been completed will continuously be implemented during the fourth tranche with the funding balances from the previous tranches. Activities for the umbrella project in the foam sector include delivery and installation of equipment at MPI, test trial, and commissioning of the converted line, and completing technical assistance to the other three foam enterprises. In the servicing sector remaining activities include extending the licensing system to HCFC-based air-conditioning (AC) equipment; finalizing the codes of practice and training manuals; providing continuous training of technicians; implementing the certification scheme; training customs officers; finalizing the purchase of recovery machines and tools for the RRR centre and

network; and conducting a survey on the use of refrigerants in the fisheries sector. The progress in the implementation of these activities will be reported on a yearly basis until their completion.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Report on HCFC consumption and verification

17. Regarding the implementation of the recommendations from the verification report, UNIDO clarified that the Government will strengthen the operational licencing and quota system to ensure continued compliance and prevent any risk of exceeding the consumption limit. Regarding regularly updating the HCFC-22 import data on the public platform, the NOU will coordinate with customs for proper action. In addition, the NOU will work with the Department of Foreign Trade to monitor the HCFC exports more closely to avoid inconsistencies in the export data from different sources.

Progress report on the implementation of the third tranche of stage II of the HCFC phase-out management plan

Legal framework

18. The Government of Morocco has already issued HCFC import quotas for 2025 at 16.56 ODP tonnes, which is lower than the Montreal Protocol control targets.

19. A discussion was held on controlling the import of HCFC-22-based equipment. It was clarified that Morocco has established a licensing system for the import of HCFC-22-based domestic and small commercial refrigeration equipment. There have been no imports of this type of equipment in the last few years. The Government is planning to extend the licensing system to HCFC-22-based AC units.

20. The foam umbrella project is delayed because the enterprise had to undertake groundwork in its facility to enlarge the production line to optimize the production process. These works have taken some time to be completed. Nevertheless, the conversion is progressing and is expected to be completed by the end of 2025. A discussion was held on establishing a ban on the import of HCFC-141b in pre-blended polyols after completion of the project in line with decision 91/54(c)(i).³ UNIDO reported that the Government has initiated internal discussions on establishing such a ban. A harmonised systems code has been assigned to the polyols containing HCFC-141b and will be used for the enforcement of the future ban.

Refrigeration servicing sector

21. The Secretariat noted that there is a delay in implementation for several reasons, including difficulties in coordinating the training of customs officers with the customs authority due to institutional changes; difficulties in identifying a national expert for the survey in the fisheries sector; and the study on the RRR taking longer than originally planned, because the expert in charge of the study has been involved in the preparation of the KIP submitted to the 96th meeting. As a result, several activities in the previous tranche will continue to be implemented in the fourth tranche. Notwithstanding the delay, the Secretariat noted that progress has been made in several activities, including the establishment of a regulatory framework to control HCFC-based equipment, development of the codes of practice, establishment of a mandatory certification system, training of trainers. UNIDO has also confirmed that stage II of the HPMP for Morocco will be completed by 31 December 2026 as established in paragraph 14 of the Agreement. To continue monitoring the implementation of the remaining activities in stage II of the HPMP, the Secretariat

³ To note the commitment of the Government of Morocco to ban the import and use of HCFC-141b contained in pre-blended polyols after the completion of the umbrella project, no later than 1 January 2025.

recommends to the Executive Committee to request the Government and UNIDO to submit on a yearly basis, progress reports on the implementation of all the remaining activities in the approved tranches and the work programme associated with the final tranche through completion of the project, verification reports until approval of stage III, and the project completion report to the first meeting of the Executive Committee in 2027. Noting that the study for the introduction of a RRR system is nearly complete, a discussion was held about whether a regulatory framework will be established to support the RRR system. UNIDO clarified that the results of the study will be incorporated into the HPMP and will contribute to the further development of the RRR network. The Government is considering requesting funding to develop an inventory and an action plan for the management of used and/or unwanted controlled substances, where a regulatory framework could be considered as part of the action plan for the operation of the RRR programme.

22. During a discussion on the link between the training of technicians and their certification, UNIDO explained that the training of technicians under the HPMP will provide skills in good servicing practices. The trained technicians will then be eligible to participate in the certification activity to be conducted under stage I of the KIP.

Gender policy implementation

23. The operational policy on gender mainstreaming for Multilateral Fund-supported projects has been incorporated into the activities of stage II of the HPMP. The recruitment of experts and project staff has aimed to have gender balance, although the recruitment of women has been challenging. The inclusion of women was also ensured in the first train-the-trainers session in which 12 per cent of the participants were women, and the workshop on the certification system included seven women out of a total of 25 participants. Awareness raising on gender mainstreaming has been undertaken as part of regular communication with the NOU and the Moroccan Association of Refrigeration Professionals and through promotion at special events such as World Refrigeration Day in 2023 and 2024. Further efforts and activities will be undertaken under the fourth tranche to continue to encourage the participation of women in the RAC sector.

Sustainability of the HCFC phase-out and assessment of risks

24. The sustainability of the HCFC phase-out achieved through the HPMP is mainly assured by the legal and institutional arrangements to control the imports of HCFCs, in bulk and contained in equipment, through the licensing and quota system. In addition, the certification of RAC technicians and companies to formalize the sector will ensure a correct application of good practices, resulting in sustained emission reduction. The establishment of a RRR system will optimize the use of refrigerants and generate additional environmental benefits. The phase-out of HCFCs in the foam sector through manufacturing-line conversion will eliminate the use of HCFC-141b in the country to achieve sustained HCFC consumption reduction. Moreover, the awareness-raising activities on HCFC phase-out and on the promotion of low-global-warming-potential (GWP) alternatives among manufacturers, RAC technicians and equipment owners will support the leap from HCFCs to low-GWP alternatives. All these activities will ensure the sustainability of the results of the HPMP.

25. The risks to the successful implementation of the HPMP may include delays in implementation and compliance-related risks, as the quota issued for 2025 is very close to the target for the year. The Government has planned customs officers training and awareness-raising activities to strengthen the licensing and quota system. The NOU, with the support of UNIDO, will also closely monitor the imports and implementation progress to ensure compliance with the targets in the Agreement and successful implementation of the programme.

Conclusion

26. Morocco has achieved the control targets in its Agreement with the Executive Committee and under the Montreal Protocol. The country is enforcing a licensing and quota system to control the import of HCFCs and has established a licensing system for the import of HCFC-22-based residential and small standalone commercial refrigeration equipment, which it will extend to AC systems. The ban on the import of HCFC-141b contained in pre-blended polyols has been planned and will be enforced once the conversion project for phasing out HCFC-141b pre-blended polyols has been completed. The codes of practice and training manuals have been developed, and the technician certification scheme is being established and will be implemented. Procurement of additional equipment and tools to support refrigerant recovery, re-use and reclamation is in progress to support the establishment of a RRR network. The disbursement of the third tranche is at 25 per cent with the overall disbursement of all approved funding at 37 per cent. Stage III will be submitted to the second meeting in 2026.

RECOMMENDATION

27. The Fund Secretariat recommends that the Executive Committee:

- (a) Note the progress report on the implementation of the third tranche of stage II of the HCFC phase-out management plan (HPMP) for Morocco; and
- (b) Request the Government of Morocco and UNIDO to submit on a yearly basis, a progress report on the implementation of all the remaining activities in the previously approved tranches and the work programmes associated with the final tranche through completion of the project, verification reports until approval of stage III, and the project completion report to the first meeting of the Executive Committee in 2027.

28. The Fund Secretariat further recommends blanket approval of the fourth and final tranche of stage II of the HPMP for Morocco and the corresponding 2025–2026 tranche implementation plan at the funding level shown in the table below.

	Project title	Project funding (US \$)	Support costs (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage II, fourth tranche)	79,032	5,532	UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Morocco

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

LATEST ARTICLE 7 DATA (Annex F)	Year: 2023	2,496.40 mt	6,270,836 CO ₂ -eq tonnes
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SECTORAL HFC CONSUMPTION DATA (CO ₂ -eq tonnes) AND ACTIVITIES									
	Aerosol	Foam	Fire-fighting	AC and refrigeration				Solvent	Other
				Manufacturing**			Servicing		
				Refrigeration	AC	Other			
Latest CP report (2023)	0.00	25,740	708	163,348	0.00	0.00	6,081,050	0.00	0.00
KIP stage I activities as agreed (Y/N)	N	N	N	*	N	N	Y	N	N

* The conversion of two production lines from HFC-134a to R-600a in one enterprise (“MANAR”) manufacturing domestic refrigeration equipment, with an associated reduction of 36,684 CO₂-eq tonnes, was approved at the 95th meeting under decision 95/68 in the amount of US \$352,985, plus agency support costs of US \$24,709.

**The HFC-134a used in car manufacturing is included in refrigeration manufacturing. In 2023 the HFC-134a used in car manufacturing is 87.32 mt or 124,868 CO₂-eq tonnes.

AVERAGE 2020–2022 HFC CONSUMPTION IN SERVICING (REVISED SURVEY DATA)	1,340.17 mt	3,599,062 CO ₂ -eq tonnes
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BASELINE CONSUMPTION DATA (CO ₂ -eq tonnes) (Article 7 data)	2020	2021	2022	Average 2020-2022
HFC annual consumption	1,687,148	1,475,421	590,302	1,250,957
HCFC baseline (65%)				883,563
HFC baseline				2,134,520

HFC CONSUMPTION ELIGIBLE FOR FUNDING	
Starting point for sustained aggregate reductions	TBD
Previously approved HFC phase-down investment projects	Yes
Aggregate reductions from previously approved projects (CO ₂ -eq tonnes)	36,684

PROJECT DATA AS AGREED			2025*	2026	2027	2028	2029	2030	Total
Consumption (CO ₂ -eq tonnes)	Montreal Protocol limits		2,134,520	2,134,520	2,134,520	2,134,520	1,921,068	1,921,068	n/a
	Maximum allowable		2,134,520	2,134,520	2,134,520	2,134,520	1,921,068	1,489,248	n/a
	Reduction from baseline (%)		0	0	0	0	10	30	n/a
Amounts recommended in principle (US \$)	UNIDO	Project costs	537,350	0	598,125	0	0	135,850	1,271,325
		Support costs	37,614	0	41,869	0	0	9,510	88,993
	Total project costs		537,350	0	598,125	0	0	135,850	1,271,325
	Total support costs		37,614	0	41,869	0	0	9,510	88,993
	Total funds		574,964	0	639,994	0	0	145,360	1,360,318

*Recommended for approval at the present meeting

Reduction from remaining consumption eligible for funding in stage I (CO ₂ -eq tonnes)*	645,272
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* Includes the reduction of 36,684 CO₂-eq tonnes from previously approved HFC investment project

Secretariat's recommendation:	Individual consideration
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PROJECT DESCRIPTION

29. 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

30. On behalf of the Government of Morocco, UNIDO as the designated implementing agency, has submitted a request for stage I of the Kigali HFC implementation plan (KIP), in the amount of US \$1,271,325, plus agency support costs of US \$88,993, as originally submitted.⁴

31. The implementation of stage I of the KIP will assist the Government of Morocco in meeting the target of 10 per cent reduction from its HFC baseline consumption by 1 January 2029 and a reduction of 26.45 per cent of its established HFC baseline by 2030, as originally submitted.⁵

32. The first tranche of stage I of the KIP being requested at this meeting amounts to US \$537,350, plus agency support costs of US \$37,614 for UNIDO, as originally submitted, for the period of June 2025 to December 2027.

II. Background

Status of implementation of the HCFC phase-out management plan

33. Table 1 presents information on the HCFC phase-out management plan (HPMP) in Morocco as of February 2025.

Table 1. HPMP implementation status for Morocco

	Stage I	Stage II
Meeting when HPMP was approved/updated	65 th /83 rd	88 th /91 st
Reduction from baseline	20% by 2020	67.5% by 2025
Total project cost (US \$)	1,286,740	1,098,532
Date of completion (actual/planned)	31 December 2021	31 December 2026

⁴ As per the letter of 3 February 2025 from the Ministry of Industry and Commerce of Morocco to UNIDO.

⁵ Including a reduction of 36,684 CO₂-eq tonnes from the previously approved HFC investment project.

Status of implementation of previous HFC-related activities

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

Table 2. Previously approved HFC-related activities in Morocco

Approval meeting	Project title	Implementing agency	Cost (US \$)	Date of completion
75 th	Survey of ODS alternatives	UNEP	110,000	December 2016
81 st	Enabling activities for HFC phase-down	UNIDO	150,000	December 2022
95 th	Conversion of two production lines in one enterprise (MANAR) manufacturing domestic refrigeration equipment from HFC-134a to R-600a	UNIDO	352,985	Ongoing

III. HFC consumption overview

HFC consumption levels

35. Morocco only imports HFCs for use in the servicing sector and in the manufacturing sectors for polyurethane (PU) foam, domestic refrigeration, mobile air-conditioning (MAC), and commercial refrigeration and air-conditioning (AC) units. The most consumed substances in 2023 were R-404A (54.5 per cent of total HFC consumption in CO₂-equivalent (CO₂-eq) tonnes), HFC-134a (22.8 per cent), R-410A (11.9 per cent), R-507A (4.3 per cent), R-407C (3.4 per cent), HFC-23 (1.2 per cent) and other HFCs (2 per cent). Table 3 presents the country's HFC consumption as reported to the Ozone Secretariat under Article 7 of the Montreal Protocol. The Government also provided the 2024 estimated consumption based on preliminary data.

Table 3. HFC consumption in Morocco (2020–2024 Article 7 data)

HFC	GWP	2020	2021	2022	2023	2024*
Metric tonnes (mt)						
HFC-23	14,800	0.00	0.00	0.00	5.07	0.00
HFC-32	675	0.00	0.00	6.88	22.00	20.00
HFC-134a	1,430	357.25	312.42	359.32	998.01	372.65
R-404A	3,922	271.06	237.05	0.00	871.99	266.12
R-407C	1,774	48.81	42.69	0.00	118.78	37.34
R-410A	2,088	11.70	10.23	0.00	356.40	106.77
R-507A	3,985	0.00	0.00	0.00	67.07	3.39
Others**	n/a	190.68	166.74	20.98	57.07	22.65
Total (mt)		879.50	769.13	387.17	2,496.38	828.92
CO₂-eq tonnes						
HFC-23	14,800	0	0	0	74,977	0.00
HFC-32	675	0	0	4,642	14,850	13,498
HFC-134a	1,430	510,868	446,761	513,820	1,427,151	532,887
R-404A	3,922	1,062,989	929,615	0	3,419,588	1,043,577
R-407C	1,774	86,582	75,726	0	210,704	66,234
R-410A	2,088	24,424	21,355	0	743,985	222,889
R-507A	3,985	0	0	0	267,254	13,509
Others**	n/a	2,286	1,964	71,840	112,327	9,099
Total (CO₂-eq tonnes)		1,687,148	1,475,421	590,302	6,270,836	1,901,693
HFC average consumption in 2020-2022			CO ₂ -eq tonnes		1,250,957	
HCFC baseline (65%)			CO ₂ -eq tonnes		883,563	
HFC baseline			CO ₂ -eq tonnes		2,134,520	

* Estimated based on preliminary data.

** Including HFC-227ea, R-407F, R-407H, R-417A, R-422D, R-438A, R-448A, R-449A, R-507A, R-508B.

HFC consumption obtained from the survey conducted during the preparation of the Kigali HFC implementation plan

36. The 2020-2023 HFC consumption obtained from the survey conducted during the preparation of the KIP is significantly higher than the reported Article 7 data. This is because the reported Article 7 data had been estimated based on a report in 2022 under the enabling activities, as there were no specific tariff codes for the different HFCs, and the reported data was the result of rough estimates. From January 2024, the tariff codes were fully applied to HFCs; therefore, the KIP survey data is considered more accurate than the reported consumption. The Government of Morocco sent a request to the Ozone Secretariat on 11 December 2024 to revise the 2020-2023 HFC consumption based on the KIP survey. The Article 7 data for 2023 was updated on the Ozone Secretariat website in April 2024 and the 2020-2022 data is to be considered by the Implementation Committee. The HFC consumption from the survey is presented in table 4 below.

Table 4. Revised HFC consumption in Morocco (2020–2023 survey data)*

HFC	GWP	2020	2021	2022	2023
HFC-23	14,800	15.40	9.96	20.75	5.07
HFC-32	675	6.48	19.36	17.70	22.00
HFC-134a	1,430	550.96	494.33	586.91	998.01
HFC-227ea	3,220	1.18	1.03	6.27	0.22
R-404A	3,922	517.82	394.22	595.57	871.99
R-407C	1,774	47.24	37.10	39.31	118.78
R-407F	1824.5	16.60	4.57	17.60	14.49
R-407H	3,985	0.00	8.53	16.85	11.19
R-410A	2,088	248.54	247.83	275.74	356.40
R-417A	2,346	9.95	15.83	16.49	6.59
R-507A	3,985	16.83	8.49	8.14	67.07
Others*	n/a	0.00	4.41	0.45	24.59
Total (mt)		1,431.00	1,245.63	1,601.77	2,496.39
CO₂-eq tonnes					
HFC-23	14,800	227,861	147,334	307,144	74,977
HFC-32	675	4,371	13,066	11,945	14,850
HFC-134a	1,430	787,880	706,889	839,278	1,427,151
HFC-227ea	3,220	3,796	3,327	20,193	699
R-404A	3,922	2,030,680	1,545,988	2,335,592	3,419,588
R-407C	1,774	83,802	65,803	69,722	210,704
R-407F	1824.5	30,283	8,334	32,108	26,432
R-407H	3,985	-	12,747	25,199	16,733
R-410A	2,088	518,833	517,336	575,603	743,985
R-417A	2,346	23,347	37,128	38,674	15,458
R-507A	3,985	67,083	33,816	32,422	267,254
Others**	n/a	0	8,177	626	53,005
Total (CO₂-eq tonnes)		3,777,935	3,099,946	4,288,506	6,270,836
Revised HFC average consumption in 2020-2022			CO ₂ -eq tonnes		3,722,129
HCFC baseline (65%)			CO ₂ -eq tonnes		883,563
Calculated revised HFC baseline			CO ₂ -eq tonnes		4,605,692

* Small discrepancies in data totals are due to rounding.

**Others include R-422D, R-438A, R-442A, R-448A, R-452A, R-453A and R-471A.

Country programme implementation report

37. Based on the survey conducted during the preparation of the KIP, the Government of Morocco submitted revised sectoral HFC consumption data for 2023 in its country programme (CP) implementation report that is consistent with the revised data reported under Article 7 of the Montreal Protocol.

HFC consumption trends

38. Although the survey data is significantly higher than the reported Article 7 data, both sets of data show a contraction in HFC consumption in 2021 and high growth in 2023, which is potentially the recovery from a decline starting in 2020 caused by the COVID-19 pandemic. The data from the survey reveal a much higher consumption of HFCs in the country than shown in the reported A7 data and there is also growth in 2022, while the reported Article 7 data had indicated a further decrease in consumption in 2022.

HFC consumption by sector

39. The manufacturing sectors in Morocco consume 3.2 per cent in CO₂-eq tonnes of the total HFC consumption, 96.6 per cent of HFCs are used in the servicing sector and 0.2 per cent in the firefighting sector. In the servicing sector, HFCs are mainly consumed for servicing in commercial refrigeration (30.6 per cent in mt and 38.9 per cent in CO₂-eq tonnes of the total HFC consumption in the servicing sector), followed by industrial and transport refrigeration (20.1 per cent in mt and 28.9 per cent in CO₂-eq tonnes), commercial and industrial AC (14.4 per cent in mt and 11.3 per cent in CO₂-eq tonnes), MAC (11.6 per cent in mt and 6.4 per cent in CO₂-eq tonnes), and other subsectors, as shown in tables 1 and 2 of annex III.

Manufacturing sector

40. There are four manufacturing sectors consuming HFCs: domestic refrigeration (amounting to 24.7 per cent of the manufacturing consumption in CO₂-eq tonnes), MAC (56.8 per cent), foam (17.9 per cent), and industrial refrigeration and AC (RAC) sector (less than 1 per cent).

41. The foremost manufacturing sector using HFCs in Morocco is in domestic refrigeration comprising one enterprise: MANAR. A project was approved at the 95th meeting for the conversion of its manufacturing lines from HFC-134a to R-600a. The project will phase out 36,684 CO₂-eq tonnes of HFC-134a and is currently under implementation.⁶

42. Morocco is the second largest manufacturer of cars in Africa, after South Africa, with an annual production of 461,864 cars in 2022. The MAC manufacturing sector has the highest share of HFC consumption in manufacturing and has experienced strong development and consumption growth in recent years. The sector comprises three enterprises which manufacture different models of cars using both HFC-134a and HFO-1234yf. At this moment, there are no other readily available alternatives for the sector.

43. Morocco also has one enterprise manufacturing PU foam using HFC-134a. The consumption amounted to less than 1 per cent of all HFC consumption in terms of CO₂-eq tonnes, or 17.9 per cent of the manufacturing consumption.

44. Additionally, there are two enterprises, Froidel and Aquaflamme, manufacturing industrial RAC that use small quantities of HFC-134a, R-404A, R-410A and R-507A. The two enterprises produce rooftop units, chillers, industrial cooling units, and air handling units, which are charged in-facility prior to distribution. The main activity of these enterprises is the installation and assembly of large RAC systems, but in recent years they have started manufacturing industrial RAC units. During 2020-2023 these manufacturers produced a limited number of units, but they plan to expand this activity in the coming years.

Refrigeration and air-conditioning servicing sector

45. The servicing sector consumes 96.6 per cent of the HFCs in Morocco. There are approximately 40,000 RAC technicians and 7,000 workshops consuming HFCs in Morocco. Activities under the HPMP

⁶ Decision 95/68

are being implemented to establish a certification system for RAC technicians and enterprises in Morocco. There are 49 centres and approximately 112 trainers in Morocco offering training programmes related to the RAC sector.

Domestic, commercial, industrial and transport refrigeration servicing

46. There are a total of 14.9 million HFC-based units of equipment operating in domestic, commercial, industrial, fishery, and the transport refrigeration subsectors, using mainly R-404A (73 per cent in CO₂-eq tonnes of the HFCs used in servicing refrigeration equipment) and HFC-134a (16 per cent) with miscellaneous amounts (11 per cent) of R-407C, R-407F, R-407H, R-507A, HFC-23, and other HFC blends (R-448A, R-452A, and R-453A). HFC-23 accounts for 0.7 per cent of the total HFC consumption and is used for servicing commercial industrial and transport refrigeration equipment. The alternative refrigerants used include R-600a in domestic and commercial refrigeration, R-290 in commercial refrigeration, and R-744 in centralized commercial refrigeration systems. There are a total of 1.55 million units of refrigeration equipment operating with alternative technologies, mainly in domestic refrigeration and the stand-alone commercial refrigeration subsector.

Residential and commercial air-conditioning servicing

47. There are a total of 3.2 million HFC-based units of equipment operating in the residential and commercial/industrial AC, and chiller subsectors, using mainly R-410A (80 per cent in CO₂-eq tonnes of the HFCs used in servicing AC equipment in these sectors), R-407C (13 per cent), R-417A (4 per cent), and HFC-32 (1 per cent), with the remaining 2 per cent distributed among R-438A, R-422D, R-453A and R-442A. Currently, HFC alternative refrigerants for use in the residential and commercial/industrial AC subsectors are not yet available in Morocco; there are 9 units of chillers operating with R-290.

Mobile air-conditioning servicing

48. There are a total of 4.3 million cars, mini-vans and buses operating with HFC-134a. HFO-1234yf is being introduced as the alternative technology. So far, a total of 182,861 vehicles are operating with HFO-1234yf. The subsector consumes 6.4 per cent in CO₂-eq tonnes of total HFC consumption in Morocco. The high leakage rate of HFC-134a-based vehicles and the more than 4 million vehicles that are part of a fast-growing trend make the subsector important to address.

Firefighting sector

49. No manufacturers of fire extinguishers have been identified in Morocco. The imported HFC-227ea has been used exclusively for refilling purposes.

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

Institutional, policy, and regulatory framework

50. Morocco ratified the Kigali Amendment to the Montreal Protocol on 22 April 2022. The Government has established an operational licensing and quota system for HFCs through Order of the Minister of Industry and Trade No. 2367-22 (5 September 2022) which included HFCs in the list of goods subject to quantitative import and export restriction measures. The procedures for implementing the HFC licensing and quota system have been put in place. The HFC import quota is determined by a committee composed of the National Ozone Unit (NOU) and the Ministry of Industry and Trade (MIT), as well as the Moroccan Association of Refrigeration Professionals (AMPF). The NOU will lead the process for quota allocation, issuance of licenses and import monitoring in collaboration with the General Directorate of Trade and the Customs Authority. It will also implement the KIP and monitor progress in coordination with

other stakeholders, ensuring the country's compliance with the Montreal Protocol phase-down schedule and the targets set in the Agreement with the Executive Committee.

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

Overarching strategy

51. The objective of the KIP is to reduce the consumption of HFCs in Morocco by 80 per cent over the period from 2025 to 2045. Morocco's KIP will be divided into three stages: stage I from June 2025 to 31 December 2030, stage II from 1 January 2031 to 31 December 2040, and stage III from 1 January 2041 to 31 December 2045. As submitted, stage I includes freezing HFC consumption and reducing it by 10 per cent of the baseline in 2029 and reducing HFC consumption by 564,603 CO₂-eq tonnes by 2030, which would represent a 26.45 per cent reduction of the current baseline, as shown in table 5 below.

52. Stage I includes an investment component for the manufacturing of domestic refrigerators, which was approved at the 95th meeting,⁷ and activities in the servicing sector that cover: the legal and institutional framework; support to RAC technicians and the training centers; building recycling, recovery and reclamation (RRR) capabilities; and awareness-raising activities.

Proposed reductions

53. The Government provided an HFC consumption forecast based on the survey data and a 9 per cent growth rate under the unconstrained scenario as shown in table 5.

Table 5. HFC consumption forecast under the unconstrained scenario, Montreal Protocol limits, and proposed HFC reductions under stage I (CO₂-eq tonnes)

	2024	2025	2026	2027	2028	2029	2030
HFC consumption forecast at an annual growth rate of 9%*	**4,422,261	4,820,265	5,254,089	5,726,957	6,242,383	6,804,197	7,416,575
Montreal Protocol HFC consumption limits	2,134,520	2,134,520	2,134,520	2,134,520	2,134,520	1,921,068	1,921,068
HFC consumption levels proposed under the KIP	2,134,520	2,134,520	2,134,520	2,134,520	2,134,520	1,921,068	1,569,917
Proposed reductions from the HFC consumption baseline (%)	0	0	0	0	0	10	26.45

* Calculated based on 9 per cent including HFCs phased in from HCFC phase-out.

** At the end of the project review, UNIDO provided the 2024 preliminary data as 1,901,693 CO₂-eq tonnes which is currently being reviewed by the country.

Proposed activities

54. Activities in the servicing sector proposed for implementation under stage I and in the first tranche and their cost breakdown as well as that of the previously approved manufacturing sector project are presented in table 6.

⁷ Ibid.

Table 6. Planned activities and their costs in stage I and the first tranche of the KIP for Morocco, as submitted

Submitted

Components	Activities	Cost (US \$)	
		Stage I	First tranche
Activities in the servicing sector			
Institutional and legal framework	• Developing a manual and conducting seven training workshops for a total of 100 customs officers on the import control of HFCs	20,000	20,000
	• Developing and introducing a licensing system to control the import of domestic and commercial AC units based on their GWP value (drafting and approval of legal text and tariff codes in coordination with customs; one workshop with importers)	7,500	0
	• Establishing a tax on the import of high-GWP HFCs and equipment containing them (legal and technical experts for drafting and approval of legal texts)	7,500	0
	• Establishing a regulatory framework for the introduction of GWP criteria for the public procurement of RAC equipment (legal and technical experts for drafting and approval of legal texts)	7,500	0
	• Updating and adopting codes and standards for RAC equipment and systems, including safety standards (a technical expert to assist the NOU in drafting the codes and standards)	15,000	15,000
	• Conducting five training sessions for 70 inspectors of RAC systems to monitor the correct application of the relevant codes, standards, and regulations	21,000	0
	• Procuring 15 refrigerant identifiers for controllers of RAC systems (5 identifiers) and customs (10 identifiers)	90,750	60,500
Subtotal institutional and legal framework		169,250	95,500
Support to the RAC servicing sector	• Monitoring local RAC and MAC markets and producing five reports on the local markets and on the consumption of critical HFCs	20,000	8,000
	• Updating the training modules of the certification system to include the MAC sector	5,000	5,000
	• Conducting 15 training sessions and certification evaluations for a total of 750 technicians on good servicing practices and managing high-GWP refrigerants (HFC-23, HFC-134a, R-404A, R-407C, R-410A and R-507A) including refrigerant designation and classification; RAC applications; identification, transport, storage and safe handling of refrigerants; proper use of servicing tools and equipment; best practices in servicing systems (leak detection, recovery and recycling, vacuum, charge); system operation; record keeping; and labelling considerations	187,500	0
	• Conducting four training sessions for a total of 100 technicians on basic knowledge of good servicing practices in the MAC sector	15,000	15,000
	• Updating the curricula of official training programmes in training centres and vocational schools to include HFCs and alternative refrigerants, and new RAC technologies (an expert to assist in drafting)	15,000	15,000

Components	Activities	Cost (US \$)	
		Stage I	First tranche
	• Providing tools and equipment for five training centres ⁸	121,000	121,000
	• Providing 10 identifiers for RAC servicing workshops	60,500	0
	• Providing tools and equipment for 10 workshops in the RAC servicing sector ⁹	120,000	120,000
	• Providing tools and equipment for five workshops in the MAC sector ¹⁰	60,500	60,500
	• Conducting six training workshops for 120 installers of large RAC systems on low-GWP alternatives to HFCs in the relevant sectors; market trends and access to new technologies in Morocco; the design, installation, operation, and maintenance of large RAC systems with low-GWP alternatives, safety considerations, and leak preventions; and recovery and reuse of refrigerants, focusing on the safety measures related to the use of flammable and/or toxic alternatives and the improvement of the cooling performance of the systems while minimizing leakage	30,000	12,500
<i>Subtotal support to RAC servicing sector</i>		<i>634,500</i>	<i>357,000</i>
Building capacity in the RRR system	• Establishing a reclamation centre, including procurement of three reclamation units; transport and installation; and training on operation and maintenance; an expert for technical assistance	280,000	0
<i>Subtotal building capacity in the RRR system</i>		<i>280,000</i>	<i>0</i>
Awareness raising	• Conducting six awareness-raising events for 500 professionals and enterprises in the RAC sector, including manufacturers, importers, distributors, servicing companies and technicians	36,000	18,000
	• Conducting six awareness-raising events for 1,000 end users (supermarkets, agro-industry, fisheries, hotel associations, public administration, and retailers of domestic devices) to promote low to zero-GWP alternatives to HFCs	36,000	18,000
<i>Subtotal awareness raising</i>		<i>72,000</i>	<i>36,000</i>
<i>Subtotal for servicing sector project</i>		<i>1,155,750</i>	<i>488,500</i>
PMU activities (see paragraph 55)		115,575	48,850
<i>Subtotal for PMU</i>		<i>115,575</i>	<i>48,850</i>
<i>Subtotal requested at this meeting</i>		<i>1,271,325</i>	<i>537,350</i>
HFC investment project in manufacturing sector			
Support to the manufacturing sector	• Phase-out of HFC-134a in the manufacturing of domestic refrigerators (conversion of MANAR approved at the 95 th meeting)	352,985	n/a
<i>Subtotal HFC investment project</i>		<i>352,985</i>	<i>n/a</i>
Total for stage I		1,624,310	537,350

⁸ Including five each of AC and refrigeration training modules; ten portable refrigerant recovery units; 25 refrigerant recovery cylinders (12.3 liter); five two-valve manifolds (HCFC-22, HFC-134a, R-404A); ten refrigeration weighing scales; 10 dual-stage vacuum pumps; 25 electronic leak detectors (CFC, HCFC, HFC, HFO); and various tools.

⁹ Including: 20 portable refrigerant recovery units; 50 refrigerant recovery cylinders (12.3 liter); 10 two-valve refrigeration manifolds (HCFC-22, HFC-134a, R-404A); 20 refrigeration weighing scales; 20 dual-stage vacuum pumps; 50 electronic leak detectors; and various tools.

¹⁰ Including: five portable refrigerant recovery units; 110 refrigerant recovery cylinders (12.3 liter); 10 two-valve refrigerant manifolds; 10 refrigerant weighing scales; 10 dual-stage vacuum pumps; 10 electronic leak detectors (CFC, HCFC, HFC, HFO); and various tools.

Project implementation, coordination and monitoring

55. The NOU will be responsible for project implementation, coordination and monitoring with the support of UNIDO. A project management unit (PMU) will be established following the same organizational structure as for the implementation of the HPMP, which will help harmonize both programmes in the areas of management and coordination. The total cost proposed for the PMU amounts to US \$115,575 for an international consultant (US \$80,902), travel (US \$23,115), and other operational costs (US \$11,558).

Total cost of stage I of the Kigali HFC implementation plan

56. The total cost for stage I of the KIP for activities in the servicing sector has been proposed at US \$1,155,750 plus US \$115,575 for the PMU, amounting to US \$1,271,325 plus agency support costs. In addition, US \$352,985 was approved at the 95th meeting of the Executive Committee for the conversion of domestic refrigeration manufacturing lines at MANAR.

Implementation plan for the first tranche

57. The first funding tranche of stage I of the KIP was submitted at a total amount of US \$537,350, as shown in table 6 above, to be implemented between June 2025 and December 2027. Detailed information on the activities to be implemented under the first tranche was agreed as submitted and is presented in table 7 below.

Table 7. Servicing sector activities and their costs in the first tranche of stage I of the KIP for Morocco

Area of activity	Activity	First tranche allocation (US \$)
Institutional and legal framework	Updating and adopting codes and standards	15,000
	Training of 100 customs officers on the control of HFCs and elaboration of a manual on this topic	20,000
	Provision of 10 identifiers for customs	60,500
<i>Subtotal institutional and legal framework</i>		<i>95,500</i>
Support to the RAC servicing sector	Monitoring of RAC and MAC local markets	8,000
	Updating the training modules of the certification system to include good practices MAC servicing	5,000
	Training of 100 MAC technicians on good practices	15,000
	Updating the curricula of training programmes to include new refrigerants and RAC technologies	15,000
	Provision of tools and equipment for five training centres	121,000
	Provision of tools and equipment for ten RAC servicing workshops	120,000
	Provision of tools and equipment for five workshops of the MAC sector	60,500
	Two workshops for installers of the RAC servicing sector	12,500
<i>Subtotal support to the RAC servicing sector</i>		<i>357,000</i>
Awareness raising	Three awareness-raising events for professionals and companies of the RAC sector	18,000
	Three awareness-raising events for end-users of RAC systems	18,000
<i>Subtotal awareness raising</i>		<i>36,000</i>
Total for activities		488,500
Project management		48,850
Total		537,350

SECRETARIAT'S COMMENTS AND RECOMMENDATION

V. Comments

Overarching strategy

58. In line with decision 92/44, the Government of Morocco has expressed a strong commitment to supporting reductions in HFC consumption in advance of Montreal Protocol targets.

59. As described in paragraph 36 above, the 2020-2023 HFC consumption data obtained from the survey during preparation of the KIP is significantly higher than the previously reported Article 7 data. The revision of the baseline data is underway. In view of this, the Secretariat reviewed the activities, proposed targets, and the eligible funding based on the established HFC baseline. Once the revision of the baseline data is approved by the Implementation Committee and the Meeting of the Parties, the targets in Appendix 2-A of the Agreement between the Executive Committee and the Government of Morocco will be adjusted to reflect the revised baseline. The Government proposed a higher reduction of the established baseline than the control target of 10 per cent to ensure compliance after potential revision of the baseline. Therefore, the proposed funding and HFC reduction will be maintained at the same level as recommended to the current meeting. The HFC phase-down as a percentage of the baseline will be decreased from 30 per cent of the current baseline to 14 per cent of the revised baseline.

60. The significant increase in HFC consumption in 2023 was due to the impact of the COVID-19 pandemic on the demand, accessibility, and prices of refrigerants. The Secretariat enquired whether other factors, such as stockpiling, had contributed to the 2023 HFC growth. UNIDO responded that the HFC consumption in 2023 is considered exceptional as it exceeded the average growth rate from 2019 to 2022 but confirmed there was no evidence of stockpiling based on the information collected from the survey. The increase was mainly caused by the introduction of HFC-based technologies during the phase-out of HCFCs, the increasing use of RAC equipment and systems spurred by economic development, and the growing use of HFCs in the manufacturing sector.

Institutional, policy and regulatory framework

HFC licensing and quota system

61. In line with decision 87/50(g), UNIDO has confirmed that Morocco has an established and enforceable system of licensing and quotas for monitoring HFC imports/exports in place. The HFC quota issued for 2025 is 2,134,520 CO₂-eq tonnes in line with the Montreal Protocol control schedule.

Technical and cost-related issues

62. The Government of Morocco is implementing a certification system for technicians to support good servicing practices and a transition to low-GWP alternatives. The activities planned under the KIP in the servicing sector, specifically training and evaluation of trainers and technicians, will facilitate the full implementation of the certification system which is expected to become mandatory in 2026.

63. The phase-down strategy for Morocco would address the HFC-134a consumption in the MAC and foam manufacturing sectors only during in stage II of the KIP. The Secretariat enquired about any measures to control the growth of HFCs during stage I. It was clarified that, for the foam sector, the Government would strengthen coordination with the manufacturing enterprise (PROCUMAR), to raise awareness on the environmental impact of HFCs and their phase-down, aiming to reach an agreement to freeze the level of HFC consumption until 2030. For the MAC sector, the manufacturing enterprises are consuming both HFC-134a and HFO-1234yf at this moment. Controlling the growth of HFC consumption in the MAC sector will be mainly through leakage prevention and reuse of refrigerant during stage I of the KIP.

64. A discussion was held on whether regulatory measures (e.g., licensing and quota) are needed to control the import of HFC-based domestic refrigerators until the ban on their manufacture and import is effective. UNIDO reported that Moroccan importers have stopped importing HFC-134a-based refrigerators and only R-600a-based refrigerators are currently imported.

65. The Secretariat reviewed the proposed activities in the servicing sector, including further strengthening the legal framework to support the transition to low-GWP alternatives; training market inspectors, training and certification of technicians, refrigerant management to reduce demand, and considers these activities meaningful, and the costs reasonable. Based on these considerations, the cost and activities in the servicing sector were agreed, as submitted, at US \$1,155,750, reductions from the HFC consumption eligible for funding in the servicing sector amount to 608,588 CO₂-eq tonnes.¹¹ Including the reduction of 36,684 CO₂-eq tonnes from the approved conversion project in MANAR, the total reduction from stage I of the KIP amounts to 645,272 CO₂-eq tonnes, as summarized in table 8. Accordingly, the Government of Morocco has agreed to reduce its 2029 HFC consumption to 1,921,068 CO₂-eq tonnes (by 10 per cent of the established baseline) and its 2030 HFC consumption to 1,489,248 CO₂-eq tonnes, representing 30 per cent reduction from the country's established HFC baseline for compliance.

Table 8. Agreed costs and reductions from HFC consumption eligible for funding and the 2030 target

Servicing sector		
Average HFC consumption in the servicing sector in baseline years	mt	1,340.17
	CO ₂ -eq tonnes	3,599,062
Average GWP of all HFCs consumed in the sector		2,686
Agreed funding	US \$	1,155,750*
Agreed cost-effectiveness threshold	US \$/kg	5.1
Reductions from the remaining HFC consumption in the sector	mt	226.62
	CO ₂ -eq tonnes	608,588
Reductions in all sectors		
Established HFC consumption baseline	CO ₂ -eq tonnes	2,134,520
<i>Reductions from the remaining HFC consumption eligible for funding achieved through conversions in the manufacturing sector previously approved</i>	CO ₂ -eq tonnes	36,684
<i>Reductions from the remaining HFC consumption eligible for funding in the servicing sector</i>	CO ₂ -eq tonnes	608,588
Total reduction to be achieved in stage I of the KIP	CO ₂ -eq tonnes	645,272
Targeted reduction		
2030 target	CO ₂ -eq tonnes	1,489,248

*Excluding costs for the PMU.

Total project cost

66. At the total cost of US \$1,624,310 consisting of US \$1,155,750 for the servicing sector activities and US \$115,575 for the PMU requested at this meeting, and US \$352,985 for the previously approved project in the manufacturing sector, stage I of the KIP for Morocco will result in a reduction of 645,272 CO₂-eq tonnes from the country's HFC consumption eligible for funding, as summarized in table 6 above.¹² Table 9 below presents the agreed costs for each component and the associated cost-effectiveness.

¹¹ Calculated in line with the methodology presented in annex I of document UNEP/OzL.Pro/ExCom/92/46.

¹² At the 95th meeting, the Executive Committee approved a conversion project to phase out HFC-134a in the manufacturing of domestic refrigerators at MANAR to achieve an HFC reduction of 36,684 CO₂-eq tonnes (decision 95/68). The project has been integrated into stage I of the KIP.

Table 9. Agreed cost of activities to be implemented by UNIDO during stage I of the KIP in Morocco

Sector	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			
Manufacturing	HFC-134a	25.65	0.00	36,684	0.00	352,985	13.76	9.62
Servicing	Various	226.62	0.00	608,588	0.00	1,155,750	5.10	1.90
PMU		n/a	n/a	n/a	n/a	115,575	n/a	n/a
Total	n/a		252.27		645,272	1,624,310	6.44	2.52

67. Stage I of the KIP will be implemented in three tranches. The implementation plan for the first tranche of the Kigali HFC implementation plan was agreed as submitted and presented in table 7 above.

Co-financing

68. Activities planned for stage I of the KIP that can foster co-financing include the conversion of production lines in the manufacturing sector, and the promotion of green public procurement. The implementation of criteria for the promotion of alternatives to high-GWP HFCs in public procurement procedure, as part of the legal and regulatory activities, will foster the Moroccan public administration's financial support for the introduction of low-GWP alternatives to HFCs in the local market. As part of the investment project approved at the 95th meeting for the RAC manufacturing sector the enterprise is expected to co-finance the aspects of the conversion that would not be covered by the KIP proposal.

2024–2026 business plan of the Multilateral Fund

69. UNIDO is requesting US \$1,271,325, plus agency support costs, for the implementation of stage I of the KIP for Morocco. The total value of US \$1,214,958, including agency support costs, requested for the period 2025–2027, is US \$829,758 above the amount in the business plan.

Gender policy implementation

70. Stage I of the KIP in Morocco has been prepared with a gender-balanced approach in all the relevant activities, in line with the operational policy on gender mainstreaming for Multilateral-Fund-supported projects. In particular, the activities related to training and awareness raising will seek gender parity among the participants, and some of these events will focus on the specific topic of women in the RAC servicing sector. Also, the experts recruited for the provision of technical assistance will be evaluated and selected on a gender-balanced basis. Finally, it is planned to invite the relevant ministries in charge of women's policies to all the awareness-raising and information events, under the KIP, or other related programmes, in order to build synergies in the promotion of women in the RAC servicing sector in the country.

Sustainability of the HFC phase-down and assessment of risks

71. The risks to the successful implementation of the KIP and to the sustainability of its achievements were evaluated and mitigation measures were incorporated into the KIP. The Secretariat considers the risks to the sustainability of the conversion in domestic refrigeration manufacturing to be low given the widespread adoption of R-600a technology in the country, in the region, and internationally. A ban on the manufacturing and imports of HFC-134a-based domestic refrigerators has been planned to be applied once the conversion is complete to ensure the sustainability of the phase-out. Regulations to control and monitor HFCs through the HFC licensing system are in place and funding to train customs and environmental inspectors is included in stage I of the KIP to ensure compliance with the phase-down schedule. Training for technicians has been included in stage I of the KIP and a certification system is expected to be mandatory in 2026 to ensure continued improvement of servicing practices and the sustainability of capacity

development in the servicing sector. Coordination and awareness-raising activities will mobilize support from stakeholders, end users and the general public to enable smooth implementation of stage I of the KIP.

72. Sustainability of the phase-down will be monitored through the periodic review and monitoring of the implementation of activities under stage I of the KIP. In addition, market monitoring and surveys will be used to assess market adoption of low-GWP technologies and can provide information on whether additional steps are necessary to achieve the specified targets and sustain the HFC phase-down.

Impact on the climate

73. The activities proposed, including efforts to promote low-GWP alternatives, leakage reduction during servicing of RAC equipment and refrigerant recovery and re-use 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 2030, Morocco will have reduced its emissions by approximately 645,272 million CO₂-eq tonnes of HFCs, calculated as the difference between the HFC baseline for compliance and the 2030 target, assuming that all consumed HFCs would eventually have been emitted.

Draft Agreement

74. A draft Agreement between the Government of Morocco and the Executive Committee for stage I of the KIP is contained in annex I to the present document.

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

75. Stage I of KIP will be simultaneously implemented with the HPMP between 2025 and 2030. Activities for the phase-down of HFC consumption are designed to be harmonized with the phase-out of HCFC consumption to the extent possible to enhance synergies for complementary efforts and to avoid duplication. Morocco will adopt a mix of parallel and integrated implementation of the KIP and HPMP. 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 Morocco for the period 2025-2030 to reduce HFC consumption by 30 per cent of the country's baseline, in the amount of US \$1,271,325, plus agency support costs of US \$88,993, for UNIDO;
- (b) Noting that the Government of Morocco has submitted to the Ozone Secretariat a request to revise the HFC baseline for consideration by the Implementation Committee;
- (c) Further noting:
 - (i) That in line with decision 95/68, stage I of the KIP includes an additional US \$352,985, plus agency support costs of US \$24,709, for UNIDO, related to the project approved at the 95th meeting to phase out 25.65 metric tonnes (36,684 CO₂-equivalent tonnes) of HFC-134a through the conversion of manufacturing lines at MANAR;

- (ii) That the Government of Morocco will establish its starting point for sustained aggregate reductions in HFC consumption based on guidance provided by the Executive Committee;
- (iii) That, once the Executive Committee provides the guidance referred to in subparagraph (c)(ii), reductions from the country's remaining HFC consumption eligible for funding will be determined in line with this guidance;
- (iv) That the reductions from the country's remaining HFC consumption eligible for funding referred to in subparagraph (c)(iii) above will be deducted from the starting point referred to in subparagraph (c)(ii);
- (d) Approving the draft Agreement between the Government of Morocco 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, in the event that the country's baseline is revised, to update Appendix 2-A of the Agreement relating to the HFC consumption limits under the Montreal Protocol and HFC agreement targets for stage I of the KIP to include the revised figures for maximum allowable consumption, and to notify the Executive Committee of the resulting levels of maximum allowable consumption, , with any necessary adjustments being made at the 97th meeting; and
- (f) Approving the first tranche of stage I of the KIP for Morocco and the corresponding tranche implementation plan, in the amount of US \$537,350, plus agency support costs of US \$37,614, for UNIDO.

Annex I
DRAFT AGREEMENT BETWEEN THE GOVERNMENT OF MOROCCO
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: 2025–2030)

Purpose

1. This Agreement represents the understanding of the Government of Morocco (“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 1,489,248 CO₂-equivalent (CO₂-eq) tonnes by 1 January 2030 in compliance with the Montreal Protocol schedule and the terms of this Agreement.
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[s] defined in row[s] 4.1.3 [and 4.2.3] (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. UNIDO has agreed to be the lead and sole implementing agency (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 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 role of the Lead IA is contained in Appendix 6-A. The Executive Committee agrees, in principle, to provide the Lead IA with the fees set out in row 2.2 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 to facilitate implementation of this Agreement. In particular, it will provide the Lead 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
To be determined	

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars		2024*	2025	2026	2027	2028	2029	2030	Total
1.1	Montreal Protocol reduction schedule of Annex F substances	%	freeze	freeze	freeze	freeze	freeze	10	10	n/a
		CO ₂ -eq tonnes	2,134,520	2,134,520	2,134,520	2,134,520	2,134,520	1,921,068	1,921,068	n/a
1.2	Maximum allowable total consumption of Annex F substances	Reduction in %	0	0	0	0	0	10	30	n/a
		CO ₂ -eq tonnes	2,134,520	2,134,520	2,134,520	2,134,520	2,134,520	1,921,068	1,489,248	n/a
2.1	Lead IA (UNIDO) agreed funding (US \$)		352,985	537,350	0	598,125	0	0	135,850	1,624,310
2.2	Support costs for Lead IA (US \$)		24,709	37,614	0	41,869	0	0	9,510	113,702
3.1	Total agreed funding (US \$)		352,985	537,350	0	598,125	0	0	135,850	1,624,310
3.2	Total support cost (US \$)		24,709	37,614	0	41,869	0	0	9,510	113,702
3.3	Total agreed cost (US \$)		377,694	574,964	0	639,994	0	0	145,360	1,738,012
4	To be determined									

* The conversion of two domestic refrigeration equipment manufacturing lines at the enterprise MANAR to phase out 36,684 CO₂-eq tonnes (25.65 mt) of HFC-134a (decision 95/68).

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval at the second 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 Ministry of Industry and Trade will monitor the effectiveness of implementing of the different components under the Plan, including monitoring compliance with phase-down levels and the impact of all of the activities against the set objectives and goals.
2. The NOU, in close cooperation and coordination with other local stakeholders and support of the Lead IA, will play a key role in monitoring the Plan implementation. The NOU will undertake monitoring, reporting and record keeping on:
 - (a) HFC import/export, including data collection from local importers;
 - (b) HFC use of different sectors; including data collection from manufacturers and surveys conducted by the Project Management Unit;
 - (c) Amount of recovered, recycled, unwanted quantities of HFC;
 - (d) Regular update on projects' deliverables as per targeted milestones;
 - (e) Plans, progress reports and completion reports of components and projects; and
 - (f) Information on HFC-based equipment, banks and status of its operation and retirement.
3. The verification will, in addition to other tasks, also cover the reports generated regarding achievements under the Plan implementation.

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;
 - (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) 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, the allocation of the reductions to the different budget items and to the funding of the Lead IA;
- (k) Ensuring that disbursements made to the Country are based on the use of the indicators;
- (l) Providing assistance with the policy, management and technical support when required; and
- (m) 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 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 \$5.04 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 MOROCCO**

Category of activity	HPMP – stage II (until 31 December 2026)		KIP – stage I		HPMP+KIP combined cost (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
Support for manufacturing sector	Phase-out of HCFC-141b contained in imported pre-blended polyols in the foam sector	344,500	Phase-out of HFC-134a in the manufacturing of domestic refrigerators (conversion of MANAR)	352,985	697,485
Provision of tools	Provision of equipment and tools to six training institutes for technician training	224,032	Provision of tools and equipment for five training centers	121,000	586,032
			Provision of ten identifiers for RAC servicing companies	60,500	
			Provision of tools and equipment for ten workshops of the RAC servicing sector	120,000	
			Provision of tools and equipment for workshops of the MAC sector	60,500	
Training of refrigeration and AC technicians	Training of 30 trainers and 450 technicians in good servicing practices, leakage control, refrigerant recovery and servicing equipment using flammable refrigerants	160,000	Training and evaluation of 750 technicians for certification	187,500	347,500
Training of MAC technicians			Training of 100 technicians of the MAC sector on good practices.	15,000	15,000
Development of training material			Updating the curricula of training programmes to include the new refrigerants and RAC technologies	15,000	15,000
Development of codes of practice	Developing a code of practice for the RAC servicing sector	15,000			15,000
Small and medium-sized enterprise programmes			Six workshops for installers of the RAC servicing sector	30,000	30,000
Strengthening of licensing	Establishing a licensing system for HCFC-22-based equipment	10,000	License system for the import of domestic and commercial air-conditioning devices.	7,500	17,500
Provision of tools to customs			Provision of five identifiers for the controllers of RAC systems	30,250	30,250
			Provision of ten identifiers for customs	60,500	60,500

Category of activity	HPMP – stage II (until 31 December 2026)		KIP – stage I		HPMP+KIP combined cost (US \$)
	Activity	Cost (US \$)	Activity	Cost (US \$)	
Training of customs officers	Training of 12 trainers of customs officers in HCFC import control	20,000	Training of 100 customs officers on the control of HFCs and elaboration of a manual on this topic.	20,000	40,000
Improving monitoring	Technical assistance to the fisheries sector including a survey to identify large end-users, a workshop to provide technical information to support the transition of the fisheries sector to low-GWP alternatives	30,000	Monitoring of RAC and MAC local markets	20,000	50,000
Other institutional and legal framework activities			Establishment of a tax for the import of high-GWP HFCs and equipment containing them	7,500	7,500
			Integrate GWP criteria in the purchase of RAC equipment by the public administration	7,500	7,500
			Training of 70 controllers of RAC systems	21,000	21,000
Certification of technicians	Establishing procedures for the certification of technicians with support of regulation and certifying 30 technicians	40,000	Updating the training modules of the certification system to include the good practices in the MAC sector	5,000	45,000
Standards and labelling			Updating and adopting codes and standards.	15,000	15,000
RRR systems	Implementing a recovery, recycling, and reclamation programme: selecting a reclamation center and provision of 50 recovery machines	150,000	Establishment of a reclamation center	280,000	430,000
Awareness	Awareness-raising activities to promote HCFC phase-out and adoption of low-GWP alternatives	10,000	Six awareness-raising events for professionals and companies of the RAC sector	36,000	82,000
			Six awareness-raising events for end-users	36,000	
Coordination and monitoring	Project monitoring, coordination and reporting	95,000	Project management for the servicing component of KIP stage I	115,575	210,575
Total		1,098,532		1,624,310	2,722,842

Annex III

HFC CONSUMPTION BY SECTOR AND SUBSTANCE IN MOROCCO

Table 1. HFC consumption in Morocco by sector and subsector in mt (2020–2023 average)

Sector	HFC-23	HFC-32	HFC-134a	R-404A	R-407C	R-407F	R-407H	R-410A	R-417A	R-507A	HFC-227ea	Others*	Total	Share of total (%)
Manufacturing														
Domestic refrigeration	0.00	0.00	24.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.10	1.4
Industrial AC and refrigeration	0.00	0.00	0.09	0.023	0.00	0.00	0.00	0.21	0.00	0.023	0.00	0.00	0.35	0.0
Mobile AC	0.00	0.00	55.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.48	3.3
PU foam	0.00	0.00	17.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.50	1.0
Subtotal for manufacturing	0.00	0.00	97.17	0.023	0.00	0.00	0.00	0.21	0.00	0.023	0.00	0.00	97.43	5.8
Refrigeration and AC servicing														
<i>Refrigeration subsectors</i>														
Domestic	0.00	0.00	168.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	168.11	9.9
Commercial refrigeration	3.2	0.00	128.89	362.88	0.00	13.32	9.14	0.00	0.00	0.00	0.00	0.53	517.96	30.6
Industrial and transport refrigeration	9.59	0.00	67.25	232	6.06	0.00	0.00	0.00	0.00	25.11	0.00	1.12	341.13	20.1
<i>Air-conditioning subsectors</i>														
Residential	0.00	14.74	0.00	0.00	0.00	0.00	0.00	112.77	0.00	0.00	0.00	0.00	127.51	7.5
Commercial and industrial	0.00	1.64	0.00	0.00	54.54	0.00	0.00	169.15	12.21	0.00	0.00	5.7	243.24	14.4
Mobile	0.00	0.00	196.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	196.13	11.6
Subtotal for servicing	12.79	16.38	560.38	594.88	60.6	13.32	9.14	281.92	12.21	25.11	0.00	7.35	1,594.09	94.1
Fire suppression	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	0.00	2.18	0.1
Total	12.79	16.38	657.55	594.903	60.6	13.32	9.14	282.13	12.21	25.133	2.18	7.35	1,693.69	100.0

*Including R-422D, R-438A, R-442A, R-448A, R-452A, R-453A, R-471A.

Table 2. HFC consumption in Morocco by sector and subsector in CO₂-eq tonnes (2020–2023 average)

Sector	HFC-23	HFC-32	HFC-134a	R-404A	R-407C	R-407F	R-407H	R-410A	R-417A	R-507A	HFC-227ea	Others*	Total	Share of total (%)
Manufacturing														
Domestic refrigeration	0	0	34,463	0	0	0	0	0	0	0	0	0	34,463	0.8
Industrial AC and refrigeration	0	0	129	90	0	0	0	438	0	92	0	0	749	0.0
Mobile AC	0	0	79,336	0	0	0	0	0	0	0	0	0	79,336	1.8
PU foam	0	0	25,025	0	0	0	0	0	0	0	0	0	25,025	0.6
Subtotal for manufacturing	0	0	138,953	90	0	0	0	438	0	92	0	0	139,573	3.2
Refrigeration and AC servicing														
<i>Refrigeration subsectors</i>														
Domestic	0	0	240,397	0	0	0	0	0	0	0	0	0	240,397	5.5
Commercial	47,360	0	184,313	1,423,215	0	24,296	13,665	0	0	0	0	940	1,693,789	38.9
Industrial and transport refrigeration	141,932	0	96,168	909,904	10,750	0	0	0	0	100,063	0	2,015	1,260,832	28.9
<i>Air-conditioning subsectors</i>														
Residential	0	9,950	0	0	0	0	0	235,407	0	0	0	0	245,357	5.6
Commercial and industrial	0	1,107	0	0	96,754	0	0	353,101	28,645	0	0	12,635	492,242	11.3
Mobile	0	0	280,466	0	0	0	0	0	0	0	0	0	280,466	6.4
Subtotal for servicing	189,292	11,057	801,344	2,333,119	107,504	24,296	13,665	588,508	28,645	100,063	0	15,590	4,213,083	96.6
Fire suppression	0	0	0	0	0	0	0	0	0	0	7,004	0	7,004	0.2
Total	189,292	11,057	940,297	2,333,209	107,504	24,296	13,665	588,946	28,645	100,155	7,004	15,590	4,359,660	100.0

*Including R-422D, R-438A, R-442A, R-448A, R-452A, R-453A, R-471A.