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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-third Meeting
Montreal, 15-19 December 2023
Items 9(c) of the provisional agenda¹

PROJECT PROPOSAL: TÜRKIYE

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

Phase-out

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

¹ UNEP/OzL.Pro/ExCom/93/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Türkiye

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage I)	UNIDO (lead), UNEP	84 th	100% phase-out by 2025

(II) LATEST ARTICLE 7 DATA (Annex C, Group I)	Year: 2022	2.59 ODP tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)							Year: 2022	
Chemical	Aerosol	Foam	Fire-fighting	Refrigeration		Solvent	Process agent	Total sector consumption
				Manufacturing	Servicing			
HCFC-22					2.59			2.59

(IV) CONSUMPTION DATA (ODP tonnes)			
2009-2010 baseline:	551.47	Starting point for sustained aggregate reductions:	641.43
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	641.43	Remaining:	0.00

(V) ENDORSED BUSINESS PLAN		2023	2024	2025	Total
UNIDO	ODS phase-out (ODP tonnes)	46.37	0.0	34.56	80.93
	Funding (US \$)	919,558	0	685,442	1,605,000
UNEP	ODS phase-out (ODP tonnes)	0.0	0.0	0.0	0.0
	Funding (US \$)	0	0	0	0

(VI) PROJECT DATA			2010	2011	2012	2013	2014	2015	2016	2017-2018	2019	2020	2021	2022	2023*	2024	2025	Total	
Montreal Protocol consumption limits (ODP tonnes)			n/a	n/a	n/a	551.40	551.40	496.26	496.26	496.26	496.26	358.50	358.50	358.50	358.50	358.50	179.20	n/a	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	456.10	360.80	265.50	170.20	74.99	74.99	50.00	40.00	30.00	20.00	10.00	0.00	n/a	
Funding agreed in principle (US \$)	UNIDO	Project costs	7,713,490	0	807,750	0	0	2,500,000	0	0	1,598,850	0	0	859,400	0	0	640,600	14,120,090	
		Support costs	578,512	0	56,543	0	0	175,000	0	0	111,920	0	0	60,158	0	0	44,842	1,026,975	
	UNEP	Project costs	0	0	103,450	0	0	0	0	0	0	0	0	0	0	0	0	0	103,450
		Support costs	0	0	13,449	0	0	0	0	0	0	0	0	0	0	0	0	0	13,449
Funds approved by ExCom (US \$)		Project costs	7,713,490	0	911,200	0	0	2,500,000	0	0	1,598,850	0	0	0		0	0	12,723,540	
		Support costs	578,512	0	69,992	0	0	175,000	0	0	111,920	0	0	0		0	0	935,424	
Total funds recommended for approval at this meeting (US \$)		Project costs												859,400				859,400	
		Support costs													60,158				60,158

*Tranche initially planned in 2022.

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Türkiye, UNIDO as the lead implementing agency has submitted a request for funding for the fourth tranche of stage I of the HCFC phase-out management plan (HPMP) in the amount of US \$1,500,000, plus agency support costs of US \$105,000 for UNIDO only.² The submission includes a progress report on the implementation of the third tranche, the verification report on HCFC consumption for the years 2019 to 2022, and the tranche implementation plan for 2024 to 2025.

Report on HCFC consumption

2. The Government of Türkiye reported a consumption of 2.59 ODP tonnes of HCFC-22 in 2022, which is 99.5 per cent below the HCFC baseline for compliance. The 2018-2022 HCFC consumption is shown in table 1.

Table 1. HCFC consumption in Türkiye (2018-2022 Article 7 data)

HCFC-22	2018	2019	2020	2021	2022	Baseline*
metric tonnes (mt)	192.10	155.28	33.15	63.96	47.16	8,007.00
ODP tonnes	10.57	8.54	1.82	3.52	2.59	551.48

*Baseline consumption includes HCFC-22, HCFC-141b, HCFC-142b, HCFC-123 and HCFC-124. Türkiye had only consumed HCFC-22 between 2018 and 2022.

3. The low levels of HCFC consumption are the result of the activities implemented under stage I of the HPMP, which included the phase-out of HCFCs in the manufacturing of polyurethane (PU) (219.8 ODP tonnes) and extruded polystyrene (XPS) foam (194.7 ODP tonnes), the phase-out of HCFC-22 in the refrigeration and air-conditioning (RAC) manufacturing sector without assistance from the Multilateral Fund, the ban on imports of HCFC-141b in bulk or contained in pre-blended polyols by 1 January 2013; the ban on HCFC-22 used for manufacturing RAC systems sold in the local market from 1 January 2015; as well as the successful implementation of the import and export licensing and quota system and activities in the refrigeration servicing sector.

Country programme implementation report

4. The Government of Türkiye reported HCFC sector consumption data under the 2022 country programme implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

Verification reports

5. The verification reports confirmed that the Government of Türkiye continued to implement an effective licensing and quota system for HCFC imports and exports, and that HCFC consumption levels from 2019 to 2022 were those reported under Article 7 of the Montreal Protocol, and were well below the maximum allowable consumption levels set in the updated Agreement with the Executive Committee.

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

Legal framework

6. The set of regulations that the Government of Türkiye has established to support the phase-out of ozone-depleting substances (ODSs) includes the harmonization of customs codes for ODSs and ODS blends with those of the European Union; the limitation of HCFC imports to servicing purposes and the

² As per the letter of 27 September 2023 from the Ministry of the Environment, Urbanization and Climate Change of Türkiye to UNIDO.

manufacturing of domestic air conditioners to be exported to Article 5 countries; the Regulation on fluorinated gases (F-gases);³ and the technician certification system in line with the requirements in place for the European Union market.

7. The Government of Türkiye ratified the Kigali Amendment on 10 November 2021 and revised its Regulation on F-gases to include the provisions of the Amendment in June 2022. The licensing system for the imports and exports of HFCs has been operational since May 2023, and the quotas will be effective as of January 2024.

Manufacturing sector

8. The nine enterprises included in the umbrella PU and XPS foam projects under stage I have completed their conversion to alternatives, and the project to convert systems houses and provide technical assistance to supply suitable non-HCFC polyol systems to their downstream users was also completed.

Refrigeration servicing sector

9. During the third tranche the following activities continued to be implemented: enforcement of the technician certification system; the programme to reduce emissions and promote good servicing practices; updates to the curricula for servicing technicians and support to vocational schools; and the enhancement of the refrigerant recycling, recovery and reclaim (RRR) network. The following progress was achieved during the reporting period:

- (a) An additional 682 RAC technicians from three regions received training on the latest legislative developments and their legal obligations related to both ODSs and F-gases, as well as hands-on training on best servicing practices including leak monitoring and refrigerant recovery;
- (b) The certification programme continues to be implemented through the vocational technical schools; a mandatory certification in handling HFCs has been introduced; and 25 state-owned vocational schools involved in training associated with the technician certification programme have received standard equipment and tools kits⁴ for training purposes;
- (c) The national ozone unit (NOU) has upgraded the current curricula for refrigeration training in consultation with the vocational technical schools and refrigeration associations. Mandatory certification in handling HFCs will be integrated with the current requirements for HCFCs, and modules on addressing flammable refrigerants will also be included, in line with the requirements currently in place for the European Union market;
- (d) RRR equipment (including reclaiming and recovery units, cylinders, and laboratory equipment and tools) was procured for three reclamation centres, with the installation and commissioning completed in August 2023 for one centre and ongoing in November 2023 for the other two;
- (e) The following demonstration projects initiated in previous tranches were completed: conversion of a cold room to a carbon dioxide/ammonia (CO₂/NH₃) cascade system; replacement of HCFC-22 systems by R-448A/R-290 systems in a supermarket; and conversion of an HCFC-123 chiller to HFO-1233zd in a state-owned plant. The projects included a comparison of energy consumption by the old and new systems, consideration of

³ Based on EU Regulation 842/2006.

⁴ Including *inter alia* recovery units, cylinders, vacuum pumps, refrigerant identifiers, leak detectors, manifolds, scales, and brazing equipment.

safety aspects for flammable refrigerants, monitoring, and a lifecycle climate-impact analysis of the new systems; and

- (f) Results of the demonstration projects and case studies, as well technical information and the reported benefits of the use of alternative technologies were disseminated at three thematic meetings held in İzmir, Ankara and İstanbul.

Project implementation and monitoring

10. A total of US \$500,000 was approved in principle for the project implementation and monitoring unit (PMU), out of which US \$310,000 have already been released in the first three tranches, and the remaining US \$190,000 will be released in the fourth to fifth tranches. A breakdown of the activities included in the PMU and the associated disbursement is presented in table 2.

Table 2. Financial disbursement related to the PMU

Activities	Funds disbursed as of the 93 rd meeting (US \$)
Short-term national technical consultants to assist in implementation of the HPMP	54,000
International expert to assist with training at systems houses and downstream users	48,000
Visits to demonstration sites and workshops in different cities	6,000
Verification reports	50,000
Total	158,000

Level of fund disbursement

11. As of October 2023, of the US \$12,723,540 approved so far, US \$10,645,036 had been disbursed (US \$10,541,586 for UNIDO and US \$103,450 for UNEP), as shown in table 3. The balance of US \$2,078,504 will be disbursed in 2023 and 2024.

Table 3. Financial report of stage I of the HPMP for Türkiye (US \$)

Project/Tranche		UNIDO	UNEP	Total	Disbursement rate (%)
Umbrella project for PU and XPS foam	Approved	7,713,490	0	7,713,490	96.0
	Disbursed	7,419,768	0	7,419,768	
First tranche	Approved	807,750	103,450	911,200	99.7
	Disbursed	805,351	103,450	908,801	
Second tranche	Approved	2,500,000	0	2,500,000	79.8
	Disbursed	1,995,403	0	1,995,403	
Third tranche	Approved	1,598,850		1,598,850	20.1
	Disbursed	321,064		321,064	
Total	Approved	12,620,090	103,450	12,723,540	83.7
	Disbursed	10,541,586	103,450	*10,645,036	

*Investment projects at PU and XPS foam enterprises were completed in December 2019, with the unused balances of US \$293,722 returned to the Fund at the 84th meeting. An unused balance of US \$22,029 from the second tranche was returned to the Fund at the 87th meeting.

Implementation of the fourth tranche of stage I of the HCFC phase-out management plan

12. The tranche request was initially submitted for a total of US \$1,500,000, including funds associated with the fourth and fifth tranches of stage I. In line with the Agreement between the Government of Türkiye and the Executive Committee revised at the 84th meeting, upon the Secretariat's request UNIDO resubmitted the tranche implementation plan including only the fourth tranche in the amount of US \$859,400, with the following proposed activities to be implemented in the refrigeration servicing sector between January and December 2024:

- (a) Continue implementation of the technician certification system, with certification of 2,500 additional technicians by the Vocational Qualifying Authority (VQA); registration of at least 2,000 technical personnel in the NOU database; training sessions on good practices in the handling of F-gases organized for 40 trainers; organization of additional awareness-raising activities for technicians on the certification scheme and current legislation; training provided to at least 200 customs and enforcement officers on the current regulations and best practices in preventing illegal trade in ODSs; and provision of 50 portable refrigerant analyzers to customs offices (US \$480,000);
- (b) Provision of technical assistance to the three RRR facilities equipped during the third tranche; provision of additional equipment, as required; finalization of the logistics of the RRR scheme; field visits, meetings and training workshops held for relevant sector stakeholders, and a study tour organized for RRR centre managers, senior technicians and representatives of relevant public authorities to a country in the region to build national capacities for RRR management (US \$325,000); and
- (c) Project monitoring and implementation, including national technical consultants to assist in the implementation of the HPMP (US \$31,400); and visits to demonstration sites, workshops in different cities, and verification reports (US \$23,000) (for a total of US \$54,400).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

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

Legal framework

13. During the last years, the Government of Türkiye has issued HCFC import quotas at levels substantially lower than the maximum allowable consumption in the Agreement and the Montreal Protocol control targets, namely, at 200 mt (11 ODP tonnes) for 2019, at 100 mt (5.5 ODP tonnes) for 2020 and 2021, and at 50 mt (2.75 ODP tonnes) from 2022, 2023 and 2024.

14. The Government has also updated its policy and regulatory framework, indicating that the recovery of substances controlled under the Montreal Protocol from domestic refrigerators and freezers, air conditioners, cooling and heat pump equipment, solvent-containing equipment, fire extinguishers and fire protection systems, shall be conducted only by qualified technical personnel. Furthermore, it is mandatory that controlled substances recovered from products or equipment must be delivered to reclaiming facilities.

Refrigeration servicing sector

15. Substantial progress has been achieved in the implementation of the technician certification system, the demonstration projects on low-GWP alternatives, and the RRR programme. The training programme has not met the target of 850 technicians trained under the third tranche yet due to the major earthquakes in 2022 and 2023; 682 technicians have been trained so far, with four additional training sessions planned in several regions in 2024. UNIDO also informed the Secretariat that an average of 400 technicians per year were trained through state-owned vocational schools, and that 5,159 technicians so far have been certified in handling F-gases. In addition, the NOU has established a system integrated with the VQA database to ensure that equipment maintenance is carried out by certified personnel. So far, 75 technicians have been registered in the NOU system.

16. Regarding the enhancement of the RRR network, UNIDO reported that the three assisted RRR centres would become operational once the procured equipment was installed, and that the NOU was in the process of obtaining an environmental license necessary for the operation of those facilities. The prevention of refrigerant emissions during the installation, servicing and decommissioning of RAC equipment is regulated by the F-gas legislation, as a joint responsibility of equipment operators and certified servicing technicians. The NOU is currently working on providing additional legislative support to the RRR network in cooperation with the Directorates of waste management and environmental permits, and on optimizing the logistics of refrigerant recovery and ensuring that the market of recovered and reclaimed refrigerant is self-sustainable.

17. UNIDO shared with the Secretariat a final report on the demonstration projects at end users, indicating that the newly installed CO₂/NH₃ cold room cascade system had achieved a six per cent reduction in energy consumption and a 60 per cent reduction in the use of refrigerant, in addition to eliminating the use of HCFCs; whereas the R-448A/R-290 systems (bottle cooler units and central refrigeration system) installed in three supermarkets had achieved a 50 per cent reduction in energy use and a reduction in refrigerant charge from 115 to 90 kg; and the HFO-1233zd(E) chiller had achieved a reduction of 11 per cent in energy use. HCFC-22 was recovered, and related technical information and case studies on the advantages of low-GWP alternative technologies have been disseminated.

Gender policy implementation

18. In line with decisions 84/92(d) and 90/48(c), gender equality and women's empowerment will be considered in the implementation of activities under the fourth tranche of stage I of the HPMP, from project formulation to implementation, to ensure that all documents prepared under the project, online platforms, events, trainings, workshops, discussions, round tables, side events, and capacity-building activities are gender-responsive. Efforts will be made to encourage female application and recruitment and to ensure gender-balanced participation in all activities. All monitoring and evaluation activities include specific reporting on gender issues.

Sustainability of the HCFC phase-out and assessment of risks

19. Stage I of the HPMP includes activities and institutional mechanisms to ensure sustainability, such as the protocol signed between the NOU and the VQA to authorize four training institutions to issue certifications. The vocational school system will be the main body responsible for continuing to provide training opportunities, certifying technicians in the RAC sector, and ensuring good practices. In addition, the quota system has proven to be accurate and effective, with no discrepancies over the last several years between the amounts licensed, authorized, exported and imported. As a result of investment activities in the manufacturing sector, relevant regulatory measures, ongoing activities in the refrigeration servicing sector, and the application of the quota system, annual HCFC consumption levels are already significantly lower than the allowable levels of consumption set out in the Agreement for stage I of the HPMP.

20. It is also noted that while the fourth tranche submission was delayed from 2022 to 2023, due partially to external circumstances as well as global restrictions, the main difficulties (e.g., difficulties in international supply, and logistic difficulties due to the local earthquakes) have been mitigated and the project continues to be implemented expeditiously. Considering the latest progress and achievements, limited risks are foreseen in the completion of stage I of the HPMP.

Conclusion

21. The Government of Türkiye has already phased out 99.5 per cent of the country's HCFC consumption baseline. The verification reports have confirmed that there is an operational licensing and quota system in place for HCFC imports and exports that can ensure compliance. The verification also confirmed the significant lower annual consumption for the years 2019-2022. The Government of Türkiye

has promulgated a robust set of regulations to support HCFC phase-out. With all investment project activities under stage I of the HPMP completed, the implementation of the second and third tranches concentrated on the refrigeration servicing sector, including the development of the certification system and support to vocational schools; training and certification of servicing technicians; enhancement of the RRR network; and demonstration and pilot projects to encourage conversions to low-GWP refrigerants. The level of funds disbursed is 20.1 per cent of the funds approved under the third tranche, and 83.7 per cent of the overall approved funding. Given the progress achieved so far, including in the regulations adopted by the Government, implementation of the fourth tranche will further contribute to the achievement of total HCFC phase-out by 2025.

RECOMMENDATION

22. The Fund Secretariat recommends that the Executive Committee note the progress report on the implementation of the third tranche of stage I of the HCFC phase-out management plan (HPMP) for Türkiye, and further recommends blanket approval of the fourth tranche of stage I of the HPMP and the corresponding 2024-2025 tranche implementation plan for Türkiye 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 I, fourth tranche)	859,400	60,158	UNIDO