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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-fourth Meeting
Montreal, 16–20 December 2019

PROJECT PROPOSAL: TURKEY

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, third tranche) UNIDO and UNEP

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Turkey

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (Stage I)	UNEP, UNIDO (lead)	68 th	86.4% by 2017

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2018	10.57 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2018	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Serviceing				
HCFC-22					10.57				10.57

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	551.47	Starting point for sustained aggregate reductions:	641.33
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	504.27	Remaining:	135.20

(V) BUSINESS PLAN		2019	2020	Total
UNIDO	ODS phase-out (ODP tonnes)	52.60	49.35	101.95
	Funding (US \$)	1,710,770	1,605,000	3,315,770

(VI) PROJECT DATA		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total	
Montreal Protocol consumption limits		n/a	n/a	n/a	551.4	551.4	496.3	496.3	496.3	496.3	496.3	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	456.1	360.8	265.5	170.2	75.0	75.0	75.0	50.00	40.00	30.00	20.00	10.00	0.00	n/a	
Agreed funding (US \$)	UNIDO	7,713,490	0	807,750	0	0	2,500,000	0	0	0	1,598,850	0	0	859,400	0	0	640,600	14,120,090	
		578,512	0	56,543	0	0	175,000	0	0	0	111,920	0	0	60,158	0	0	44,842	1,026,975	
	UNEP	0	0	103,450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103,450
		0	0	13,449	0	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	0		0	0	0	0	0	0	0	11,124,690
	Support costs	578,512	0	69,992	0	0	175,000	0	0	0		0	0	0	0	0	0	0	823,504
Total funds requested for approval at this meeting (US \$)	Project costs										1,598,850								1,598,850
	Support costs										111,920								111,920

Note: Revised Agreement to be considered at the 84th meeting.

Secretariat's recommendation:	Individual consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of Turkey, UNIDO as the lead implementing agency has submitted a request for funding for the third tranche of stage I of the HCFC phase-out management plan (HPMP), at the amount of US \$1,598,850, plus agency support costs of US \$111,920 for UNIDO only.¹ The submission includes a progress report on the implementation of the second tranche, the verification report on HCFC consumption for the years 2015 to 2018, the tranche implementation plan for 2019 to 2020, and a request of extension of stage I of the HPMP to December 2025.

Introduction

2. The request for funding for the third tranche of stage I of the HPMP for Turkey should have been submitted for approval in 2016. It was delayed, initially due to security issues and change of Government, later followed by slow disbursement of funds in the refrigeration servicing sector caused by the complexities associated with the enforcement of the national technician certification scheme and the high number of stakeholders to be reached. With the appointment of a new NOU, the activities in the refrigeration servicing sector have not reached a sufficiently advanced stage of implementation.

3. Accordingly, the Government of Turkey submitted, along with the tranche request, a request for extension of the date of completion of stage I to 2020, as additional time will be required to complete the remaining activities planned for the refrigeration servicing sector under stage I, including the strengthening of the recovery, recycling, and reclaiming (RRR) network.

4. Noting that all the investment activities under stage I have been successfully completed, that the Government of Turkey has already adopted a comprehensive package of regulations and has reduced HCFC consumption by 98 per cent of the baseline, that the total phase-out of HCFCs is expected in 2025, and further noting that the RRR programme has not been implemented yet and that it will take more than two years to procure and distribute the equipment and make the programme operational, the Government of Turkey agreed to the Secretariat's proposal to extend stage I of the HPMP up to 2025 to achieve total phase-out of HCFCs. Considering the intensity of the remaining activities and the large number of stakeholders to be reached, a one-year extension would not be sufficient to complete all the activities.

5. Accordingly, the Secretariat is submitting for consideration by the Executive Committee the request for the third funding tranche and extension of stage I up to 2025 to achieve total phase-out of HCFC.

Report on HCFC consumption

6. The Government of Turkey reported a consumption of 10.57 ODP tonnes of HCFC in 2018, which is 98.1 per cent below the HCFC baseline for compliance. The 2014-2018 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Turkey (2014-2018 Article 7 data)

HCFC-22	2014	2015	2016	2017	2018	Baseline*
Metric tonnes	2,251.27	326.36	490.00	333.24	192.09	8,007.00
ODP tonnes	123.82	17.95	26.95	18.33	10.57	551.48

*Baseline consumption includes HCFC-22, HCFC-141b, HCFC-142b, HCFC-123 and HCFC-124. Turkey has only consumed HCFC-22 between 2014 and 2018.

7. HCFC consumption in Turkey has decreased significantly due to the activities implemented under stage I of the HPMP, which included the phase-out of HCFCs in the manufacturing of polyurethane (PU)

¹ As per the letter of 4 October 2019 from the Ministry of Environment and Urbanization of Turkey to UNIDO.

(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 (CP) implementation report

8. The Government of Turkey reported HCFC sector consumption data under the 2018 CP implementation report that is consistent with the data reported under Article 7 of the Montreal Protocol.

Verification reports

9. The verification reports confirmed that the Government of Turkey continued to implement an effective licensing and quota system for HCFC imports and exports, and confirmed that HCFC consumption levels from 2015² to 2018 were those reported under Article 7 of the Montreal Protocol, and were well below the maximum allowable consumption levels set in the Agreement with the Executive Committee.

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

Legal framework

10. The Government of Turkey has established a set of regulations to support the phase-out of ozone-depleting substances (ODS), including the harmonization of the customs codes for ODS and ODS blends with those of the European Union (EU), and limiting HCFC imports to servicing purposes and the manufacturing of domestic air conditioners to be exported to Article 5 countries. In January 2018, Turkey also promulgated a fluorinated-gases (F-gases) regulation.³ The new technician certification system, in force since 2017, is in line with the requirements in place for the EU market.

11. Other regulatory measures being developed for the refrigeration servicing sector include the accreditation of enterprises and certification of persons dealing with products or equipment containing F-gases, as well as measures for the RRR and disposal of ODS and F-gases. A licensing and quota system for HFCs is being considered under the enabling activities.

Manufacturing sector

12. All nine enterprises included in the umbrella PU and XPS foam projects under stage I have completed their conversion to alternatives. In addition, the project to convert systems houses and provide technical assistance to supply suitable non-HCFC polyol systems across a range of applications used by the downstream users (small- and medium-sized enterprises) was also completed. An overview of the projects completed in the manufacturing sector is presented in Table 2.

² The verification identified that the consumption reported under Article 7 of the Montreal Protocol in 2015 should be 32.53 ODP tonnes instead of the reported 17.95 ODP tonnes. The NOU has confirmed that the reason for the difference was an export mistakenly recorded in metric tonnes instead of kilograms, and that the Ozone Secretariat was currently correcting the figure.

³ Based on EU Regulation 842/2006. Preparation of a more comprehensive F-gas Regulation including provisions regarding implementation of the Kigali Amendment is underway.

Table 2. Overview of PU and XPS foam enterprise conversions

Enterprises	Funds (US \$)		Phase-out (ODP tonnes)		Alternatives phased in
	Approved	Disbursed	HCFC-141b	HCFC-142b/22*	
PU foam (4)	7,713,490	7,419,768	99.0	0.0	n-pentane
XPS foam (5)			0.0	114.2	HFC-152a/DME (4) CO ₂ (1)
Non-eligible enterprises	0	0	0.0	80.5	HFC-152a/DME, HFO
Systems houses (5) and downstream users (204)**	1,184,000	1,147,689	120.8	0.0	Methyl formate, methylal, hydrocarbons, water, HFOs and limited HFC for specific applications***
Total	8,897,490	8,567,457	219.8	194.7	

*Average ratio of 62 per cent HCFC-142b and 38 per cent HCFC-22.

**Two additional non-eligible systems houses participated in the project with their own funding. It is estimated that more than 460 additional small downstream users benefited from the project.

***Mostly spray foam.

Refrigeration servicing sector

13. Activities under the second tranche focused on the enforcement of the new technician certification system. A total of 25 state-owned vocational schools have trained an average of 400 technicians per year within the framework of the certification scheme. Each of these centres is receiving a kit containing recovery units and tools for training purposes.

14. As of 2019, a total of 2,071 refrigeration technicians have been registered in the database developed by the National Ozone Unit (NOU), and 1,603 technicians have been trained and certified for F-gases by the refrigeration association. In cooperation with manufacturing enterprises, the NOU held training sessions for 221 refrigeration technicians in five provinces. The NOU also upgraded the current refrigeration training curricula in consultation with the training institutes and refrigeration associations. Mandatory certification for handling HFCs will be integrated with the current requirements for HCFCs, and specific modules for addressing flammable refrigerants will also be included, in line with the requirements currently in place for the EU market.

15. The demonstration projects include: conversion of a cold room to CO₂/NH₃ cascade system; replacement of HCFC-22 systems by R-448A/R-290 systems in a supermarket; an HCFC-123 chiller conversion to HFO-1233zd in a state-owned plant; and awareness activities on HCFC-22 phase-out and on available low-global-warming-potential (GWP) alternatives. They also include a comparison of energy consumption by the old and new systems, and safety aspects for flammable refrigerants. They are being implemented through a national refrigeration association, drawing on its technical knowledge, capability, and experience on the local market, and are expected to be completed by December 2019. Any conversions to flammable refrigerants considered are done in line with the decisions 72/17 and 73/34. A detailed analysis of the results found will be included in a final report to be disseminated upon completion of the project.

Project implementation and monitoring unit (PMU)

16. A total of US \$500,000 was approved in principle for the PMU in Turkey, out of which US \$210,000 have already been released in the first two tranches, and the remaining US \$290,000 will be released in the third to fifth tranches. A breakdown of the funds approved so far in the first two tranches, the activities implemented by the PMU and the associated funding disbursed in the implementation of those activities is presented in Table 3 below.

Table 3. Financial disbursement related to the PMU

Activities	Funds disbursed (US \$)
Short-term national technical consultants to assist in implementation of the HPMP activities	40,000
International expert to assist with training to systems houses and downstream users	37,000
Visits to demonstration sites and workshops in different cities	0*
Verification reports	20,000
Total	97,000

*US \$24,000 has already been committed and is expected to be disbursed by the end of 2019.

Level of fund disbursement

17. As of October 2019, of the US \$11,124,690 approved so far, US \$9,984,910 had been disbursed (US \$9,881,460 for UNIDO and US \$103,450 for UNEP), as shown in Table 4. The remaining balance of US \$1,139,780 will be disbursed in 2020 and 2021.

Table 4. Financial report of stage I of the HPMP for Turkey (US \$)

		UNIDO	UNEP	Total	Disbursement rate (%)
Umbrella project for PU and XPS foam	Approved	7,713,490	0	7,713,490	96
	Disbursed	7,419,768	0	7,419,768	
First tranche	Approved	807,750	103,450	911,200	99
	Disbursed	802,225	103,450	905,675	
Second tranche	Approved	2,500,000	0	2,500,000	66
	Disbursed	1,659,467	0	1,659,467	
Total	Approved	11,021,240	103,450	11,124,690	90
	Disbursed	9,881,460	103,450	9,984,910*	

*Investment project on PU and XPS foam will be financially completed in December 2019 and any unused balances will accordingly be returned to the first meeting in 2020. An estimated balance of US \$36,311 from the systems house project will be returned to the Fund once the associated tranches have been financially completed.

Implementation plan for the third tranche of the HPMP

18. The following activities, to be implemented by UNIDO between December 2019 and December 2020, will focus on the refrigeration servicing sector:

- (a) Continuation of the enforcement of the technician certification system by training an additional 50 trainers, training and certifying 800 additional technicians, permanently updating the data base of certified technicians and service shops licensed for HCFC use, and conducting four additional awareness workshops (US \$251,800);
- (b) Continuation of the demonstration projects to promote and test low-GWP refrigerants, including completion of two additional conversions/replacements of HCFC-22 equipment, and an awareness programme for the use of alternatives (US \$90,000);
- (c) Enhancement of the RRR network, including the upgrading of three additional reclamation centres and laboratories, and associated recovery equipment, cylinders and tools (US \$1,157,050); and
- (d) Project monitoring and implementation unit: field inspections and independent verification reports on HCFC consumption (US \$100,000, including national consultants (US \$24,000), technical expert for RRR for three years (US \$42,000), workshops and

events (US \$11,000), stakeholders' meetings (US \$7,000) and verification reports (US \$16,000)).

19. The date of completion of stage I was originally December 2018, as established in paragraph 14 of the Agreement between the Government and the Executive Committee. The request for the third tranche also included a request for extension of stage I of the HPMP to December 2020, in order to allow the release of the last two tranches and associated implementation of the pending activities in the refrigeration servicing sector listed above. This request had been submitted to the 83rd meeting, but the Secretariat suggested to consider it at the present meeting along with the request for the third tranche.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

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

Legal framework

20. The Government of Turkey has already issued HCFC import quotas for 2019 and 2020 at 200 mt (11 ODP tonnes) and 100 mt (5.5 ODP tonnes) respectively, i.e. substantially lower than the Montreal Protocol control targets.

21. Although the Government of Turkey allows a small amount of HCFC-22 imports for manufacturing products to be exported to other Article 5 countries, no applications for license to import HCFC-22 for this purpose have been received in the last two years.

Refrigeration servicing sector

22. Substantial progress has been achieved in the development and implementation of the technician certification system, the demonstration projects on low-GWP alternatives, and regulations related to the refrigeration servicing sector. However, the RRR programme has not progressed to the same extent as the other activities in the sector.

23. UNIDO explained that the components of the refrigeration servicing sector were interlinked and could not be executed independently. A functional RRR network requires certified technicians and certified service shops responsible and running their businesses in line with the new certification scheme and with the F-Gas Regulation. For this reason, priority was given to those activities.

24. Turkey has also updated its policy and regulatory framework, indicating that the recovery of controlled substances under the Montreal Protocol in domestic refrigerators and freezers, air conditioners, cooling and heat pump equipment, equipment that contains solvents, fire extinguishers and fire protection systems, shall be conducted only by qualified technical personnel. It is also mandatory to deliver controlled substances that are recovered from products or equipment to reclaiming facilities.

25. During the third tranche, the NOU will work on strengthening the RRR programme. The NOU is reaching agreements to relocate two reclamation centers to enterprises handling the Waste Electrical and Electronic Equipment (WEEE), and to integrate the RRR operation within the WEEE management scheme and regulations in order to ensure its long-term sustainability and facilitate co-financing for the upgrade of the reclaiming centers. New waste management regulations are expected to be published in 2020.

26. The Secretariat considers that this approach goes beyond the simple procurement and distribution of RRR equipment and takes advantage of the existing infrastructure and policy framework for waste

management, which would likely result in a self-sustained RRR operation. The extension of stage I of the HPMP to 2025 will allow sufficient time to the Government of Turkey to upgrade its RRR network and related regulations, and make it operational.

Revision to the HPMP Agreement

27. The Agreement between the Government of Turkey and the Executive Committee has been adjusted to reflect the extended timeline for completion of stage I of the HPMP. The Agreement allocates the third tranche in 2019 instead of 2016, whereas the fourth tranche, initially planned for 2017, has been split into two tranches: to be released in 2022 and 2025, respectively, as per existing policies. The modifications to the Agreement are presented in Annex I to the present document. The full revised Agreement will be appended to the final report of the 84th meeting.

Sustainability of the HCFC phase-out

28. The Secretariat noted with appreciation that further to the completion of the RAC manufacturing sector conversion to alternative technologies, the Government of Turkey has promulgated a ban on the manufacturing of products using ODS for the domestic market, effective as of 1 January 2015. In addition, in order to support the sustainability of the HCFC phase-out in the PU foam sector and to ensure that enterprises are not importing and using HCFCs pure or contained in polyols, Turkey is controlling the import of polyols at the customs level. Industrial associations work in close cooperation with the Ministry and play an awareness-raising role.

Conclusion

29. Turkey has already phased out 98.1 per cent of its 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 Government of Turkey has also promulgated a robust set of regulations to support HCFC phase-out, completed all investment projects under stage I, including more than 200 foam enterprises and systems houses, and phased out HCFC in the manufacturing sectors. Activities in the refrigeration servicing sector included the development and enforcement of the technician certification scheme, training and certification of 1,631 technicians, updating the refrigeration training curricula, and ongoing projects to demonstrate low-GWP technologies. The level of funds disbursed is 90 per cent of the approved funding. Given the progress achieved towards the complete phase-out of HCFCs, the extension of stage I of the HPMP to 2025 would allow for additional time to complete ongoing activities in the refrigeration servicing sector.

RECOMMENDATION

30. The Executive Committee may wish to consider:
- (a) Noting the progress report on the implementation of the second tranche of stage I of the HCFC phase-out management plan (HPMP) for Turkey;
 - (b) Approving the extension of the duration of stage I of the HPMP to achieve the complete phase-out of HCFCs by 1 January 2025, on the understanding that no further extensions will be approved;
 - (c) Deducting 137.06 ODP tonnes of HCFCs from the remaining HCFC consumption eligible for funding;
 - (d) Noting that the Secretariat had updated the Agreement between the Government of Turkey and the Executive Committee, as contained in Annex I to the present document,

specifically paragraph 1 and Appendix 2-A, to reflect the extension of the duration of stage I and the complete phase-out of HCFCs, and paragraph 16, which had been added to indicate that the updated Agreement superseded that reached at the 68th meeting; and

- (e) Further approving the third tranche of stage I of the HPMP for Turkey, and the corresponding 2019-2020 tranche implementation plan, at the amount of US \$1,598,850, plus agency support costs of US \$111,920 for UNIDO, on the understanding that if Turkey were to decide to proceed with retrofits and associated servicing to flammable and toxic refrigerants in refrigeration and air-conditioning equipment originally designed for non-flammable substances, it would do so assuming all associated responsibilities and risks and only in accordance with the relevant standards and protocols.

Annex I

**TEXT TO BE INCLUDED IN THE UPDATED AGREEMENT BETWEEN THE GOVERNMENT
OF THE REPUBLIC OF TURKEY AND THE EXECUTIVE COMMITTEE OF THE
MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF
HYDROCHLOROFLUOROCARBONS
(Relevant changes are in bold font for ease of reference)**

1. This Agreement represents the understanding of the Government of the Republic of Turkey (the “Country) and the Executive Committee with respect to the reduction of controlled use of the ozone-depleting substances (ODS) set out in Appendix 1-A (“The Substances”) to **achieve 100 per cent phase-out by 1 January 2025** in compliance with Montreal Protocol schedules.

16. This updated Agreement supersedes the Agreement reached between the Government of the Republic of Turkey and the Executive Committee at the 68th meeting of the Executive Committee.

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	n/a	n/a	n/a	551.40	551.40	496.26	496.26	496.26	496.26	496.26	358.50	358.50	358.50	358.50	358.50	179.20	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	n/a	n/a	n/a	456.10	360.80	265.50	170.20	74.99	74.99	74.99	50.00	40.00	30.00	20.00	10.00	0.00	n/a
2.1	Lead IA (UNIDO) agreed funding (US \$)	7,713,490	0	807,750	0	0	2,500,000	0	0	0	1,598,850	0	0	859,400	0	0	640,600	14,120,090
2.2	Support costs for Lead IA (US \$)	578,512	0	56,543	0	0	175,000	0	0	0	111,920	0	0	60,158	0	0	44,842	1,026,975
2.3	Cooperating IA (UNEP) agreed funding (US \$)	0	0	103,450	0	0	0	0	0	0	0	0	0	0	0	0	0	103,450
2.4	Support costs for Cooperating IA (US \$)	0	0	13,449	0	0	0	0	0	0	0	0	0	0	0	0	0	13,449
3.1	Total agreed funding (US \$)	7,713,490	0	911,200	0	0	2,500,000	0	0	0	1,598,850	0	0	859,400	0	0	640,600	14,223,540
3.2	Total support costs (US \$)	578,512	0	69,992	0	0	175,000	0	0	0	111,920	0	0	60,158	0	0	44,842	1,040,424
3.3	Total agreed costs (US \$)	8,292,002*	0	981,192	0	0	2,675,000	0	0	0	1,710,770	0	0	919,558	0	0	685,442	15,263,964
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)																	221.60
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)																	74.70
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)																	0
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)																	98.10
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)																	99.00
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)																	0.00
4.3.1	Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes)																	0.00
4.3.2	Phase-out of HCFC-142b to be achieved in previously approved projects (ODP tonnes)																	120.00
4.3.3	Remaining eligible consumption for HCFC-142b (ODP tonnes)																	0.00
4.4.1	Total phase-out of HCFC-141b contained in imported polyols agreed to be achieved under this Agreement (ODP tonnes)																	31.53
4.4.2	Phase-out of HCFC-141b contained in imported polyols to be achieved in previously approved projects (ODP tonnes)																	0.00
4.4.3	Remaining eligible consumption for HCFC-141b contained in imported polyols (ODP tonnes)																	0.00

(*) Approved at the 62nd meeting of the Executive Committee