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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Seventy-fifth Meeting
Montreal, 16-20 November 2015

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, second 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)	UNIDO (lead), UNEP,	68 th	86.4% by 2017

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2014	123.82 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2013	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-123									
HCFC-124									
HCFC-141b									
HCFC-142b									
HCFC-22				11.4	113.0				124.4

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	551.5	Starting point for sustained aggregate reductions:	641.33
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	504.27	Remaining:	135.20

(V) BUSINESS PLAN		2015	2016	2017	Total
UNIDO	ODS phase-out (ODP tonnes)	82.3	52.6	49.4	184.2
	Funding (US \$)	2,675,000	1,710,770	1,605,000	5,990,770

(VI) PROJECT DATA			2010	2012	2013	2014	2015	2016	2017	Total
Montreal Protocol consumption limits			n/a	n/a	551.4	551.4	496.3	496.3	496.3	n/a
Maximum allowable consumption (ODP tonnes)			n/a	n/a	456.1	360.8	265.5	170.2	75.0	n/a
Agreed funding (US\$)	UNIDO	Project costs	7,713,490	807,750	0	0	2,500,000	1,598,850	1,500,000	14,120,090
		Support costs	578,512	56,543	0	0	175,000	111,920	105,000	1,026,975
	UNEP	Project costs	0	103,450	0	0	0	0	0	103,450
		Support costs	0	13,449	0	0	0	0	0	13,449
Funds approved by ExCom (US\$)	Project costs		7,713,490	911,200	0	0	0	0	0	8,624,690
	Support costs		578,512	69,992	0	0	0	0	0	648,504
Total funds requested for approval at this meeting (US\$)	Project costs		0	0	0	0	2,500,000	0	0	2,500,000
	Support costs		0	0	0	0	175,000	0	0	175,000

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Turkey, UNIDO as the lead implementing agency, has submitted to the 75th meeting a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP), at the amount of US \$2,500,000, plus agency support costs of US \$175,000 for UNIDO only. The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption and the tranche implementation plan for 2016.

Report on HCFC consumption

HCFC consumption

2. The Government of Turkey reported a consumption of 123.82 ODP tonnes of HCFC in 2014. The 2010-2014 HCFC consumption is shown in Table 1.

Table 1. HCFC consumption in Turkey (2010-2014 Article 7 data)

HCFC	2010	2011	2012	2013	2014	Baseline
Metric tonnes (mt)						
HCFC-22	4,197.2	3,733.04	2,988.93	2,673.06	2,251.28	4,792.6
HCFC-123	0.9	1.10	6.40	0.00	0.00	1.1
HCFC-124	0.3	0.00	0.00	0.00	0.00	0.2
HCFC-141b	1,719.5	1,962.20	1,396.90	0.00	0.00	1,755.8
HCFC-142b	1,123.4	100.80	0.00	0.00	0.00	1,457.4
Total (mt)	7,041.3	5,797.14	4,392.23	2,673.06	2,251.28	8,007
ODP tonnes						
HCFC-22	230.8	205.32	164.39	147.02	123.82	263.6
HCFC-123	0.0	0.02	0.13	0.0	0.0	0.0
HCFC-124	0.0	0.0	0.0	0.0	0.0	0.0
HCFC-141b	189.1	215.84	153.65	0.0	0.0	193.1
HCFC-142b	73.0	6.55	0.0	0.0	0.0	94.7
Total (ODP tonnes)	492.9	427.73	318.17	147.02	123.82	551.4

3. The three main HCFCs consumed in Turkey prior to 2012 were HCFC-141b, HCFC-142b and HCFC-22. However, due to the conversion of the extruded polystyrene (XPS) and polyurethane (PU) foam subsectors to non-HCFC technologies there is no longer a demand for HCFC-142b and HCFC-141b in the country. Since 2013 Turkey has consumed only HCFC-22, mainly in the refrigeration servicing sector, in 2014 consumption was already at 77.5 per cent below the baseline

Verification report

4. The verification report confirmed that the Government is implementing a licensing and quota system for HCFC imports, and indicated consumption of 147.2 ODP tonnes in 2013 and 123.9 ODP tonnes in 2014. The negligible discrepancies with the data reported under Article 7 of the Montreal Protocol are due to imports that were registered late in the electronic system but verified by customs officials against the allocated quota. The verification report concluded that HCFCs consumption in 2013 and 2014 is below the baseline (551.4 ODP tonnes) and the targets in the Agreement between the Government of Turkey and the Executive Committee (456.10 ODP tonnes in 2013 and 360.80 ODP tonnes in 2014). All necessary legislation is in place and the country has an effective control system over imports of HCFCs. Although HCFC exports have been negligible, (0.04 ODP tonnes in 2013 and 0.54 ODP tonnes in 2014), the verification report recommended that HCFC exports should also be included in the licensing system.

Country programme (CP) implementation report

5. The Government of Turkey reported HCFC sector consumption data under the 2014 CP implementation report at the level of 124.4 ODP tonnes which is slightly higher than the data reported under Article 7, due to a small amount of exports reported that were not deducted from the total figure indicated in the CP report.

Progress report on the implementation of the first tranche

Legal framework

6. The Government of Turkey has introduced a ban on the import of HCFC-141b in bulk or contained in pre-blended polyols since 1 January 2013 and a ban on the use of HCFC-22 for manufacturing refrigeration and air-conditioning (RAC) systems since 1 January 2015 (except for the production of domestic air-conditioning systems to be exported to Article 5 countries). The import of equipment containing HCFCs was banned on 1 January 2010.

Foam manufacturing sector

7. Out of nine enterprises included in the umbrella PU and XPS foam projects, seven have completed their conversions to alternatives, while one PU and another XPS foam enterprise have experienced technical issues and are pending testing results. Table 2 below contains the summary on the enterprises conversion.

Table 2. Overview of PU and XPS foam enterprises conversion

Enterprise	Funds (US \$)		Phase-out (ODP tonnes)		Alternatives phased in
	Approved	Spent	HCFC-141b	HCFC-142b/22*	
PU foam (4 enterprises)	7,713,490	7,123,128	99.0	0.0	n-pentane
XPS foam (5 enterprises)			0.0	114.2	HFC-152a/DME (4) CO ₂ (1)
Non-eligible enterprises	0.00	n.a.	0.0	80.5	HFC-152a/DME, HFO
Total ODP phased out			99.0	194.7	

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

8. To address the remaining small and medium-sized enterprises (SMEs) in the foam sector a technical assistance project was approved (US \$1,184,000) allowing eligible systems houses to supply suitable non-HCFC polyol systems across a range of applications within their customers' base. It was agreed that downstream foam enterprises would cover all the expenses required for the conversion while technical support, technology transfer and funding for testing to be provided by the Multilateral Fund through the systems houses. The systems houses are now in different stages of progress. The total amount of HCFC-141b phase-out to be achieved is 31.53 ODP tonnes. The formulations developed, status of implementation and expected dates of conversions completion are presented in Table 3.

Table 3 Overview of system houses project implementation

Systems house (SH)	Alternatives selected/status of implementation	Completion date		Funds allocated (US \$)
		Systems houses	Downstream-users	
SH 1	Methyl formate, HCs / converted	Completed	Dec. 2016	50,000*
SH 2	Methyl formate, methylal and HFOs / converted	Dec. 2015	Dec. 2016	180,000
SH 3	Pentane, HFCs, premixed methylal, water-blown systems / converted	Dec. 2015	Dec. 2016	120,000
SH 4	Methyl formate (HFOs and limited HFCs for specific application) / converted	Dec. 2015	Dec. 2016	180,000
SH 5	Methyl formate (HFOs and limited HFCs for specific application) / converted	Dec. 2015	Dec. 2016	120,000

Systems house (SH)	Alternatives selected/status of implementation	Completion date		Funds allocated (US \$)
		Systems houses	Downstream-users	
SH 6	Pentane, methyl formate, HFCs and methyl formate blend, HFCs blend / converted	Dec. 2015	Dec. 2016	350,000
SH 7	Methyl formate (pentane in testing) / conversion ongoing	Jun. 2016	Jun. 2017	180,000
All SH	Verification visits post-conversion and production of awareness materials			4,000
	Total			1,184,000

*Systems house not eligible. Funds used for providing tests at the downstream enterprises

Refrigeration servicing sector

9. Two workshops in good refrigeration servicing practices were organized for 20 trainers; the inventories of the service shops and service technicians were updated; and 42 customs officers were trained on ODS regulations and identification of HCFCs and HCFCs-containing equipment.

10. A new certification scheme for both RAC enterprises and technicians was developed and scheduled to be implemented in 2016. The updated system is based on the European Union (EU) model, with curricula differentiated for subsectors, mandatory certification for handling HFCs and flammables and natural refrigerants. While the certification is already obligatory for the handling of HCFCs in the current system, the update will introduce penalties and establish a division of responsibilities between the training and certification processes with a special commission to be set-up for certification purposes.

11. A concept is being developed for the demonstration of low global-warming potential (GWP) refrigeration systems to begin in 2016 which will involve conversion of HCFC-22 RAC systems to alternatives (potentially ammonia, CO₂, hydrocarbons (HC) or HFOs). A one-day national conference on HCFC alternatives was organized by the NOU in August 2014 targeting mainly stakeholders in the industry.

Level of fund disbursement

12. As of October 2015, of the US \$8,624,690 so far approved, US \$7,510,867 (87 per cent) had been disbursed (US \$7,445,270 for UNIDO and US \$65,597 for UNEP) as shown in Table 4. The balance of US \$1,113,823 will be disbursed in 2015 and 2016.

Table 4. Financial report of stage I of the HPMP for the Turkey

Components	Approved (US \$)	Disbursement (US \$)
Umbrella project for PU and XPS foam (UNIDO)*	7,713,490.	7,123,128
UNIDO	807,750	322,142
UNEP	103,450	65,597
Total	8,624,690	7,510,867
Disbursement rate		87.1%

*Approved at the 68th Meeting and subsequently subsumed in the HPMP.

Implementation plan for the second tranche

13. The following activities will be implemented in 2016: completion of the conversion of systems houses; training of 60 additional trainers and 400 technicians; implementation of the certification scheme; two small-scale demonstration projects for the promotion of low-GWP refrigerants; enhancement of the recovery and recycling programme including procurement and distribution of 600 recovery machines and three sets of laboratory equipment, and the establishment of a reclaim centre; training of 30 additional customs officers; and project monitoring and implementation.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Report on HCFC consumption

14. With regard to the recommendation from the verification report that HCFC exports should also be included in the licensing system, UNIDO explained that although HCFC exports are negligible, they are subject to licensing for customs control. The recommendation by the verification was already considered by the NOU as an adjustment to the legislation for approval by the Government.

Progress report on the implementation of the second tranche

Legal framework

15. Responding to the Secretariat's query on the reasons for the increase in the number of importers from 50 in 2012 to 234 in 2014, despite the registration fee and the reductions in HCFC consumption, UNIDO clarified that due to the additional fees imposed by the main importers, many distributors decided to import directly which is easily accommodated by the transparent and effective electronic licensing and quota allocation system. Distributors and manufacturers registered in the NOU database can apply for quotas one year in advance. The Government of Turkey has already issued HCFC import quotas for 2015 at the level of 27.5 ODP tonnes of HCFC-22 only.

Foam manufacturing sector

16. Upon request for an explanation for the introduction of HFCs in certain systems houses, UNIDO clarified that there is no single alternative for systems houses as mixtures produced have to meet the specific demands of the end-user. For all subsectors except spray foam, pentane and methylal are the preferred technologies. For spray foam applications, end-users are more in favor of the HFC mixtures than methyl formate. HFCs count for more than 50 per cent of the blowing agent used in spray foam, but the systems houses believe that this percentage will be reduced after the implementation of the training programme for downstream-users, which will promote the use of other alternative technologies.

Refrigeration servicing sector

17. Upon a request for the reasons for the delay in the implementation of the recovery and recycling scheme, UNIDO clarified that the priority under the first tranche was given to the development of the certification scheme in line with the EU requirements.

18. On the availability of new RAC equipment using low-GWP alternatives, UNIDO indicated that ammonia, CO₂, HCs, and HFOs are all available and well spread in the market. The Government of Turkey introduced an advanced phase-out for the RAC manufacturing sector outside of the HPMP, and gave priority to the SMEs and servicing sector under the HPMP to ensure a smooth phase-out of HCFCs from the market. The ODS alternative survey is expected to provide more detail on the prices for the alternatives.

19. Noting that the demonstration project to raise awareness and promote low-GWP refrigerants may possibly include the conversion of HCFC-based equipment to flammable alternatives, the Secretariat drew UNIDO's attention to the discussions at the Executive Committee on retrofits to flammable and toxic refrigerants in RAC equipment originally designed for non-flammable substances (decisions 72/17¹

¹ To include in the approval of HPMPs, tranches, projects or activities that proposed the retrofit of HCFC based refrigeration and air conditioning equipment to flammable or toxic refrigerants that the Executive Committee notes that, if the country engages in retrofitting HCFC-based refrigeration and air-conditioning equipment to flammable or toxic refrigerants and associated servicing, it does so on the understanding that they assume all associated responsibilities and risks.

and 73/34²). UNIDO confirmed that the Government of Turkey is fully aware of the decisions and the required risk management when dealing with flammable refrigerants in the country. The project will be implemented in cooperation with the Refrigeration Association, which has the expertise and the knowledge to advise on the safety procedures. The project will meet national safety regulations. Enterprises installing a system designed on flammable refrigerants will have to obtain permission from the responsible authorities before the commissioning can take place. Upon installation and commissioning, the site is audited by an authorized independent safety evaluator.

Conclusion

20. In 2013 and 2014 Turkey was in compliance with both the Montreal Protocol and the Agreement between the Government of Turkey and the Executive Committee and in 2014 HCFC consumption was already 77.5 per cent below the HCFC consumption baseline. The quota issued in 2015 is 27.5 ODP tonnes of only HCFC-22 representing five per cent of the HCFC baseline. The verification report confirmed that there is an operational licensing and quota system in place for HCFC imports that can ensure compliance, and a ban on imports of HCFC-141b since 1 January 2013 and a ban of HCFC-22 for manufacturing RAC systems since 1 January 2015. The import of equipment containing HCFCs was banned on 1 January 2010. Seven out of nine eligible PU foam and XPS foam enterprises have completed their conversions to alternative technologies with a total phase-out of 168.6 ODP tonnes of HCFCs, and six out of seven systems houses have developed HCFC-free formulations and nearly completed their conversions. Assistance to downstream foam users will continue in 2016. Activities in the refrigeration servicing sector included the development of a technicians' certification scheme that will enter into force in 2016. The level of funds disbursed is 87 per cent of the approved funding. Given the progress achieved, the Secretariat recommends that the Executive Committee approves the request for the second tranche.

RECOMMENDATION

21. The Fund Secretariat recommends blanket approval of the second tranche of stage I of the HPMP for Turkey, and the corresponding tranche implementation plan, at the funding level shown in the table below, 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.

	Project title	Project funding (US \$)	Support cost (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage I, second tranche)	2,500,000	175,000	UNIDO

² If a country were to decide, after taking into account decision 72/17, to proceed with retrofits that used flammable substances in equipment originally designed for non-flammable substances, it should be done only in accordance with the relevant standards and protocols.