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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-first Meeting
Montreal, 5-9 December 2022
Items 9(c) and (d) of the provisional agenda¹

PROJECT PROPOSAL: SYRIAN ARAB REPUBLIC

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) UNEP and UNIDO

¹ UNEP/OzL.Pro/ExCom/91/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Syrian Arab Republic

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage I)	UNEP (lead) and UNIDO	86 th	67.5% phase-out by 2025

(II) LATEST ARTICLE-7 DATA (Annex C Group I)	Year: 2021	65.40 ODP tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2021	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22		2.75		8.25	22.00				33.00
HCFC-141b		27.50		0.00	1.65				29.15
HCFC-142b		3.25		0.00	0.00				3.25

(IV) CONSUMPTION DATA (ODP tonnes)			
2009-2010 baseline:	135.03	Starting point for sustained aggregate reductions:	135.03
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved:	12.88	Remaining:	43.88

(V) ENDORSED BUSINESS PLAN		2022	2023	2024	Total
UNEP	ODS phase-out (ODP tonnes)	4.50	0	4.33	8.83
	Funding (US \$)	467,548	0	445,295	912,843
UNIDO	ODS phase-out (ODP tonnes)	0	0	0	0
	Funding (US \$)	0	0	0	0

(VI) PROJECT DATA			2010**	2020-2021	2022-2023	2024	2025	Total
Montreal Protocol consumption limits			n/a	87.77	87.77	87.77	43.88	n/a
Maximum allowable consumption (ODP tonnes)			n/a	87.77	87.77	87.77	43.88	n/a
Funding agreed in principle (US \$)	UNEP	Project costs	0	238,428	418,100	398,200	154,548	1,209,276
		Support costs	0	28,199	49,448	47,095	18,278	143,020
	UNIDO*	Project costs	1,465,361	351,608	1,843,236	864,453	0	4,524,658
		Support costs	109,902	24,613	129,026	60,512	0	324,053
Funds approved by ExCom (US \$)	Project costs	1,465,361	590,036					2,055,397
	Support costs	109,902	52,812					162,714
Total funds recommended for approval at this meeting (US \$)	Project costs			2,261,336				2,261,336
	Support costs			178,474				178,474

* Including funding for investment projects to be approved at the present meeting

** Funding approved at the 62nd meeting

Secretariat's recommendation:	Individual consideration
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PROJECT DESCRIPTION

1. On behalf of the Government of the Syrian Arab Republic, UNEP as the lead implementing agency has submitted a request for funding for the second tranche of stage I of the HCFC phase-out management plan (HPMP), at the amount of US \$418,100, plus agency support costs of US \$49,448 for UNEP, and two umbrella projects to completely phase out HCFC-22 in the air-conditioning (AC) sector and HCFC-141b in the polyurethane (PU) foam sector, at the total cost of US \$3,531,143 plus agency support costs of US \$247,180 for UNIDO, as originally submitted.² The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2020 to 2021, and the tranche implementation plan for 2023 to 2024.

Report on HCFC consumption

2. The Government of the Syrian Arab Republic reported a consumption of 65.40 ODP tonnes of HCFC in 2021, which is 52 per cent below the HCFC baseline for compliance. The 2017-2021 HCFC consumption is shown in table 1.

Table 1. HCFC consumption in the Syrian Arab Republic (2017-2021 Article 7 data)

HCFC	2017	2018	2019	2020	2021	Baseline
Metric tonnes (mt)						
HCFC-22	560.00	660.00	550.00	725.00	600.00	1,100.00
HCFC-141b	588.00	250.00	300.00	330.00	265.00	615.55
HCFC-142b	45.00	100.00	120.00	90.00	50.00	104.92
(Total) (mt)	1,193.00	1,010.00	970.00	1,145.00	915.00	1,820.47
ODP tonnes						
HCFC-22	30.80	36.30	30.25	39.88	33.00	60.50
HCFC-141b	64.68	27.50	33.00	36.30	29.15	67.71
HCFC-142b	2.93	6.50	7.80	5.85	3.25	6.82
(Total) (ODP tonnes)	98.41	70.30	71.05	82.03	65.40	135.03

3. HCFC consumption has been decreasing overall due to political unrest and uncertainty in the country. The consumption increase in 2020 was due to the improved security situation and economic recovery in the country, which increased the use of HCFCs. At the 86th meeting, the Executive Committee approved stage I of the HPMP, which included awareness-raising on HCFC phase-out, training of customs officers, and enforcement of the licensing and quota system, which in turn resulted in a decrease in HCFC consumption in 2021.

Country programme (CP) implementation report

4. The Government of the Syrian Arab Republic reported HCFC sector consumption data under the 2021 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 is 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 2020 to 2021 was correct (as shown in table 1 above). The verification concluded that the Syrian Arab Republic is implementing a licensing and quota system for HCFC imports and is in

² As per the letter of 25 September 2022 from the Ministry of Local Administration and Environment of the Syrian Arab Republic to UNEP; and the letter of 30 August 2022 from the Ministry of Local Administration and Environment of the Syrian Arab Republic to UNIDO.

compliance with the maximum allowable consumption established in the Agreement with the Executive Committee.

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

Legal framework

6. The Government of the Syrian Arab Republic has established an enforceable licensing and quota system to ensure compliance. Several awareness-raising workshops have taken place to inform stakeholders on the procedures to import HCFCs. The Government has also taken measures to ban the new establishment of manufacturing capacity based on ODSs, including HCFCs.

7. During the first tranche, the National Ozone Unit (NOU) assisted the General Directorate of Customs in training customs officers and adopting the 2022 version of the Harmonized Systems (HS) Code for controlled substances. The NOU also worked with the Syrian Arab Organization for Standardization and Metrology (SASMO) and adopted the safety standard for refrigeration systems and heat pumps (ISO 5149 English version) to address the flammability of refrigerants. In cooperation with SASMO, a review of the national standards has been conducted and the following standards have been identified for adoption: ISO 5149:2014, ISO 817:2014, ISO 17584:2005, ISO 11650:1999, and IEC 60335:2012. The NOU has been working closely with SASMO and adopted ISO 5149 and is currently developing the standard operating procedures for ISO 5149 in Arabic to address safety in the use of flammable refrigerants, which are expected to be operational by December 2022.

8. The Government of the Syrian Arab Republic ratified the Kigali Amendment in 2021; and the Kigali HFC implementation plan is under preparation.

Manufacturing sector

9. The conversion project to phase out HCFC-22 and HCFC-141b from the manufacturing of unitary AC equipment and rigid PU insulation panels at Al Hafez Group has been completed in 2021, no quota was issued to the company for the import of HCFC-based refrigerant after 2021, and remaining funding will be returned by the end of 2022. A total of 162.40 mt (90.60 mt of HCFC-22 and 71.80 mt of HCFC-141b) (12.90 ODP tonnes) of HCFCs has been phased out.

Refrigeration servicing sector

10. The following activities were implemented during the first tranche:

- (a) Training of 20 customs officers in compliance obligations under the Montreal Protocol and the control of HCFC imports has been planned and will be conducted once the customs clearance is completed and refrigerant identifiers have been received at the training institutions;
- (b) The training materials on good servicing practices provided by UNEP for trainers and technicians have been adapted to the national working environment and translated into Arabic; two training institutes are updating their training curriculum to include good servicing practices and servicing with alternative refrigerants to HCFCs;
- (c) One workshop for training trainers in good refrigeration and air-conditioning (RAC) equipment servicing practices was conducted from 24 to 26 August 2022 and 27 trainers, including three women, were trained; the training of technicians has been planned for the fourth quarter once the equipment and tools have been received;

- (d) The development of a certification scheme for RAC technicians is progressing; the establishment of a technical body as a major partner in implementing the certification system is under consideration and discussion;
- (e) Tools and equipment (six refrigerant identifiers, 10 leak detectors, vacuum pumps, recovery units, training tools, servicing tools and equipment) have been procured, delivered and are going through customs clearance, and is expected to be distributed by the end of 2022 to training and certification centers, as well as customs key points; the bidding process is underway for additional training tools and equipment (e.g. 10 sets of split AC test rigs, 10 sets of refrigeration cycle demonstration units, recovery and charging module, 20 sets of refrigerant identifiers and leak detectors) that will be provided to training institutes;
- (f) Six awareness-raising workshops were held on HCFC phase-out, to promote low-global-warming potential (GWP) alternatives and assist manufacturing companies to select suitable alternatives to HCFCs; a total of 134 participants from Government departments and manufacturing industries attended the workshop; a two-day workshop was also held to raise awareness on the phase-out of HCFCs and the introduction of alternative technologies in the foam and AC manufacturing sectors; awareness-raising material is being developed; and
- (g) UNIDO contracted a consultant team and visited 51 enterprises in five regions across the country to raise awareness on HCFC phase-out in the foam and RAC manufacturing sectors and to promote low-GWP alternatives; 19 manufacturing enterprises have been identified and included in the sector plan for conversion to low-GWP technologies.

Project implementation and monitoring

11. A Project Management Unit (PMU) was established to support the NOU in implementing the activities planned under the HPMP and coordinating with agencies and stakeholders. The PMU also supports the independent verification of consumption, monitors progress and prepares progress reports. As of September 2022, a total of US \$20,000 was disbursed by the PMU for the cost of staff and consultant (US \$15,449), office supplies and meetings (US \$631) and other miscellaneous costs (US \$3,920).

Level of fund disbursement

12. As of September 2022, of the US \$590,036 approved for the first tranche of stage I of the HPMP (US \$238,428 for UNEP and US \$351,608 for UNIDO), US \$142,614 (24 per cent) had been disbursed (US \$72,607 for UNEP and US \$70,007 for UNIDO). The balance of US \$447,422 will be disbursed in 2022 and 2023.

13. For the funding approved for Al Hafez at the 62nd meeting prior to the approval of stage I of the HPMP, US \$1,462,556 has been disbursed (99.8 per cent) for UNIDO; the balance of US \$2,805 will be returned at the 91st meeting.

Implementation plan for the second tranche of the HPMP

Refrigeration servicing sector

14. The following activities will be implemented in the refrigeration servicing sector between January 2023 and December 2024:

- (a) Developing policies and regulations to provide incentives for introducing low-GWP alternatives to HCFCs; developing a legal framework for ODS recovery and recycling;

developing and implementing an e-licensing system; enhancing ODS control on goods entering the country for transit under the Free Trade Agreement by adopting HS2022, providing customs officers with training, and developing standard procedures for monitoring and controlling ODS imports (UNEP) (US \$42,208);

- (b) Conducting cross-border enforcement cooperation meetings; training 40 customs officers in HCFC import control; and strengthening the enforcement of the licensing and quota system (UNEP) (US \$12,440);
- (c) Reviewing and updating national ODS standards and codes in accordance with the international standards; and introducing international standards for labelling, record-keeping and reporting requirements, as well as standards for equipment and installations operating with hydrocarbon and ammonia (UNEP) (US \$14,080);
- (d) Training 40 trainers and 340 RAC technicians in good servicing practices and servicing equipment using alternatives; continue the development of a certification scheme for RAC technicians and implementing a pilot phase of the certification programme for evaluators; and certifying 240 technicians (UNEP) (US \$333,772);
- (e) Conducting an awareness-raising campaign on HCFC phase-out and the introduction of low-GWP alternatives through local media and printed materials; dissemination of information on alternative technologies with a focus on the RAC manufacturing sector in collaboration with RAC associations (UNEP) (US \$6,500); and

PMU

- (f) Project implementation, coordination, monitoring and reporting at a cost of US \$9,100 with the following breakdown: staff and consultant (US \$8,067), travel (US \$958), and miscellaneous (US \$75). A balance of US \$1,533 from the first tranche will be used in the second tranche.

Submission of investment projects in the manufacturing sector

Background

15. Stage I of the HPMP for the Syrian Arab Republic proposed to address the consumption in both the manufacturing and servicing sectors to meet the 67.5 per cent reduction by 2025. However, the submission to the 86th meeting only included a funding request for activities in the refrigeration servicing sector, as the data required for the preparation of the investment component could not be obtained in time due to challenges faced in the field. It was planned to collect data during implementation of the first tranche when providing technical assistance to manufacturing enterprises, including providing information on alternative technologies and raising awareness on HCFC phase-out. The Executive Committee approved stage I of the HPMP for the Syrian Arab Republic,³ and decided to allow submission of investment projects during the implementation of stage I of the HPMP to phase out consumption in the manufacturing sector, prior to 31 December 2023, on the understanding that the eligibility of the consumption associated with the investment projects would be reviewed upon their submission and the remaining consumption eligible for funding would be adjusted accordingly.

16. After the approval of the stage I, UNIDO's consultant team visited 51 enterprises in five regions across the country to raise awareness on HCFC phase-out in the PU foam and RAC manufacturing sectors, and to promote low-GWP alternatives. Based on the data collected, 19 manufacturing enterprises have been

³ Decision 86/83

identified as eligible and two umbrella projects were developed to completely phase out HCFCs in the PU foam and AC manufacturing sectors.

Sector distribution of HCFC consumption in the Syrian Arab Republic

17. HCFCs are used in both the manufacturing and servicing sectors. The manufacturing sector include PU foam, extruded polystyrene (XPS) foam and AC manufacturing. The manufacturing sector consumes 68 per cent of HCFCs in the baseline (34 per cent in PU foam, 13 per cent in AC manufacturing, and 10 per cent in XPS foam), and the remaining 32 per cent of HCFCs is used in the RAC servicing sector, as shown in table 2.

18. The HCFC consumption in the manufacturing sector has decreased significantly from the baseline in the last 12 years due to the closure of many enterprises and the phase-out of 90.60 mt of HCFC-22 and 71.80 mt of HCFC-141b in Al Hafez implemented prior to the approval of stage I. The Government of the Syrian Arab Republic reported a consumption of 250 mt (27.5 ODP tonnes) of HCFC-141b in the PU foam sector and 150 mt (8.25 ODP tonnes) of HCFC-22 in the AC manufacturing sector in 2021. The average consumption for the period 2019–2021 is 286.67 mt (31.53 ODP tonnes) for HCFC-141b and 141.36 mt (7.77 ODP tonnes) for HCFC-22.

Table 2. Sector distribution of HCFC consumption in the Syrian Arab Republic

Sector/Sub-sector	2017	2018	2019	2020	2021	Baseline
<i>Manufacturing</i>						
HCFC-141b in PU foam	580.00	240.00	290.02	320.00	250.00	615.55
HCFC-142b in XPS board	45.00	100.00	120.00	90.00	50.00	104.90
HCFC-22 in XPS board	30.00	66.67	80.00	40.00	50.00	69.94
HCFC-22 in AC manufacturing	96.40	134.07	134.07	140.00	150.00	243.34
Sub-total in manufacturing	751.40	540.74	624.09	590.00	500.00	1,033.73
<i>Servicing</i>						
HCFC-22	433.60	459.26	335.91	550.00	400.00	786.68
HCFC-141b (cleaning)	8.00	10.00	10.00	10.00	15.00	0.00
Sub-total in servicing	441.60	469.26	345.91	560.00	415.00	786.68
Total (mt)	1,193.00	1,010.00	970.00	1,150.00	915.00	1,820.40
<i>Manufacturing</i>						
HCFC-141b in PU foam	63.80	26.40	31.90	35.20	27.50	67.71
HCFC-142b in XPS board	2.93	6.50	7.80	5.85	3.25	6.82
HCFC-22 in XPS board	1.65	3.67	4.40	2.20	2.75	3.85
HCFC-22 in AC manufacturing	5.30	7.37	7.37	7.70	8.25	13.38
Sub-total in manufacturing	73.68	43.94	51.48	50.95	41.75	91.76
<i>Servicing</i>						
HCFC-22	23.85	25.26	18.48	30.25	22.00	43.27
HCFC-141b (cleaning)	0.88	1.10	1.10	1.10	1.65	0.00
Sub-total in servicing	24.73	26.36	19.58	31.35	23.65	43.27
Total (ODP tonnes)	98.41	70.30	71.05	82.30	65.40	135.03

Remaining eligible consumption

19. The starting point for aggregate reductions in HCFC consumption, the HCFC phase-out approved for the investment project in Al Hafez at the 62nd meeting, the HCFC phase-out in stage I, the proposed HCFC reduction by the umbrella projects, and the remaining eligible consumption for future funding are presented in table 3.

Table 3. HCFC consumption starting point, reduction and remaining eligible for funding (ODP tonnes)

Sector/ sub-sector	Substance	Starting point	Reduction by stage I servicing, Al Hafez	Remaining after stage I approval	Umbrella project phase-out			Remaining
					Funded	Not funded	Total	
<i>Manufacturing</i>								
PU foam sector	HCFC-141b	67.71	7.90	59.81	23.30	36.51	59.81	0.00
XPS foam manufacturing sector	HCFC-22	3.85	0.00	3.85	0.00	3.85	3.85	0.00
	HCFC-142b	6.82	0.10	6.72	0.00	6.72	6.72	0.00
AC manufacturing	HCFC-22	13.38	4.98	8.4	1.83	6.57	8.40	0.00
Sub-total		91.76	12.88	78.88	25.13	53.75	78.88	0.00
Service sector	HCFC-22	43.27	16.31	26.96	0.00	0.00	0.00	26.96
Total		135.03	29.19	105.84	25.13	53.75	78.88	26.96

Phase-out strategy

20. The umbrella projects are prepared to completely phase out HCFCs in the manufacturing sector and contribute to the 67.5 per cent reduction in 2025. The two umbrella projects contain the following components, as originally submitted:

- (a) Conversion of foam manufacturing in two systems houses (Munir Al Hakim and Baalbaki for Trade and Industry) to produce cyclopentane pre-blended polyols for downstream end users;
- (b) Phase-out of 147.88 mt (16.27 ODP tonnes) of HCFC-141b in the manufacturing of insulation foam for domestic and commercial refrigeration equipment in 14 enterprises;
- (c) Phase-out of 64.33 mt (7.08 ODP tonnes) of HCFC-141b in the manufacturing of PU discontinuous sandwich panels for insulation in the foam sector in two enterprises; and
- (d) Phase-out of 33.20 mt (1.83 ODP tonnes) of HCFC-22 in the manufacturing of domestic air conditioners in the enterprise Baalbaki.

21. The Syrian Arab Republic reported 86.67 mt (5.63 ODP tonnes) of HCFC-142b and 56.67 mt (3.12 ODP tonnes) of HCFC-22 (average 2019-2021) in the XPS foam sector. During the survey undertaken for the preparation of the umbrella projects, no enterprises have been identified as eligible. Therefore 8.75 ODP tonnes of HCFC consumption in the XPS foam sector will be phased out by the country through regulatory measures and deducted from the starting point.

Phasing out HCFC-141b in the PU foam sector*Sector background*

22. The PU foam sector in the Syrian Arab Republic consists of two eligible systems houses and 32 downstream users of pre-blended polyols manufacturing insulation foam for refrigerators, freezers, water heaters, and discontinuous sandwich panels. Of the 32 enterprises, 16 enterprises were established before the cut-off date and 100 per cent owned by Syrian nationals and are therefore eligible for funding. Of these, 14 enterprises manufacture insulation foam for domestic and commercial refrigeration and two enterprises manufacture discontinuous sandwich panels. The information on the eligible enterprises is contained in table 4.

Table 4. Eligible foam enterprises and their consumption in the PU foam sector

Sector/Enterprise	Year established	HCFC-141b consumption (mt)			
		2019	2020	2021	Average for 2019-2021
Systems house					
Al Hakim System House Co.	2001	100	125	175	133.33
Baalbaki for Trade and Industry	2004	190	195	75	153.34
<i>Sub-total</i>		290	320	250	286.67
Downstream users manufacturing refrigeration insulation foam					
Al Salam Refrigerators	1990	34.1	31.2	25.30	30.20
Al Bassmaji Co	2000	24.90	26.00	26.00	25.63
Laalou Industrial Domestic Appliances	1999	32.40	18.40	18.60	23.13
Al Kamal Co	1998	11.97	12.03	12.04	12.01
Atassi & Darouzy RAC	1978	4.60	4.40	4.80	4.60
Abed Al Salam Zarrour Co.	1996	18.00	18.00	18.00	18.00
Ammar Refrigerators	1987	12.70	13.40	12.70	12.93
Golden Eagle (Al Reem)	2004	8.10	7.60	7.60	7.77
Emirates for Refrigeration	2004	4.10	4.80	5.00	4.63
Al Taki Refrigeration Co.	1973	4.50	3.40	3.20	3.70
Penson Gold	2003	3.40	3.70	3.70	3.60
AL Najma Group for Industry and Trade	2006	1.20	1.10	0.90	1.07
Al Shahab	1970	0.50	0.50	0.20	0.40
Syrian Center for Commercial RAC Industry	2007	0.20	0.20	0.20	0.20
<i>Sub-total</i>		171.70	156.30	150.10	147.88
Downstream users manufacturing sandwich panel					
Al Atassi Manufacturing and Trading	2004	26.50	32.40	33.70	30.87
Baalbaki Industry	2004	33.10	33.20	34.10	33.46
<i>Sub-total</i>		59.60	65.60	67.80	64.33
Total eligible consumption (mt)		231.30	221.90	217.90	212.21
Non-eligible (mt)		69.73	109.67	43.96	74.46
Total consumption (mt)		290	320	250	286.67

Technology selection and phase-out strategy in the PU foam sector

23. Cyclopentane was selected as the alternative technology, considering that it is a mature low-GWP technology that has been widely applied with good foaming properties and low operating cost.

24. It is proposed to convert the two systems houses in the country to produce cyclopentane-blended polyols and to convert the 16 eligible downstream users to use cyclopentane pre-blended polyols in their foam production. The non-eligible downstream users will phase out HCFC-141b at their own cost, taking advantage of the conversion to cyclopentane pre-blended polyols in the two systems houses.

Incremental costs

25. The incremental capital costs (ICC) for the systems houses include the replacement of pre-mixing units, cyclopentane storage tank, safety systems, test, trial and training, as shown in table 5.

Table 5. Detailed ICCs for the conversion of two systems houses (US \$)

Description	Cost (US \$)
Preparation (workshops, technology transfer, training)	50,000
Cyclopentane tank with accessories	80,000
Rigid piping from cyclopentane tank and polyol tank to premix unit	10,000
Pre-mixing station	70,000
Safety, ventilation system, nitrogen supply	40,000

Description	Cost (US \$)
Installation, test, trial, commissioning	40,000
Sub-total	290,000
Contingency (10 per cent)	29,000
Total	319,000

26. The ICCs for the conversion of 14 downstream users in refrigeration foam manufacturing include the replacement of foam dispensers, safety ventilation systems, test, prototyping and training for 11 downstream users and technical assistance for three small downstream users. Incremental operating costs (IOC) are not being requested. A typical cost breakdown for 11 large downstream users is shown in table 6.

Table 6. ICCs for conversion of downstream users in refrigeration insulation foam (US \$)

Description	Quantity (Qty)	Unit cost	Total	Co-funding	Funding to Multilateral Fund (MLF)
Replacement of high-pressure foam dispenser, modification of jigs, fixtures, molds, piping, pumps, nitrogen supply system	1	115,000	115,000	0	115,000
Ventilation, exhaust system, gas sensors, alarm, monitoring and control system, fire protection, lightning protection and grounding	1	39,000	39,000	0	39,000
Firefighting water reservoir	1	5,000	5,000	5,000	0
Trial, prototyping and commissioning	1	5,000	5,000	5,000	0
Sub-total		164,000	164,000		154,000
Contingencies (10 per cent)		16,400	16,400	1,000	15,400
Total ICC cost		180,400	180,400	11,000	169,400

27. The ICCs for the conversion of foam manufacturing in two discontinuous sandwich panel producers include the costs for foam dispensers, pre-mixing units, hydrocarbon storage tank, safety systems, test, trial and training, as shown in table 7.

Table 7. Detailed costs for conversion of discontinuous sandwich panel line (US \$)

Description	Qty	Unit cost	Total	Co-funding	Cost to MLF
<i>Production</i>					
New foam dispenser with two heads	1	110,000	110,000	0	110,000
Replacement of pre-mixing unit	1	50,000	50,000	0	50,000
Modification of press	1	10,000	10,000	0	10,000
Hydrocarbon tank and accessories (piping and pumps, ventilation)	1	20,000	20,000	0	20,000
Buffer tank for polyol	1	10,000	10,000	0	10,000
Nitrogen supply system	1	10,000	10,000	0	10,000
Sub-total production			210,000	0	210,000
<i>Plant safety system: ventilation, exhaust system, gas sensors, alarm, monitoring and system for the plant, fire protection, lightning protection and grounding, safety certification</i>		50,000	50,000	0	50,000
<i>General works: truck receiving area preparation, and firefighting water reservoir</i>	1	10,000	10,000	10,000	0
<i>Technology transfer</i>					
Training and trial, prototyping and commissioning	1	10,000	10,000	0	10,000
Total ICC			280,000	10,000	270,000
<i>Contingencies (10 per cent)</i>			28,000		27,000
Total costs			308,000		297,000

28. The IOCs for converting to cyclopentane at two panel enterprises were calculated at US \$334, but were not requested.

29. The total incremental cost for conversion of the PU foam sector (two systems houses and 16 downstream users) amounts to US \$2,753,975 as originally submitted, to phase out 286.67 mt (31.53 ODP tonnes) of HCFC-141b (of this amount, 212.21 mt is eligible), with a cost effectiveness of US \$12.98/kg (based on eligible consumption), as shown in table 8.

Table 8. Total incremental costs for the PU foam umbrella project (US \$)

Sectors/Enterprises	HCFC-141b phase-out (mt)	Total cost	Costs to MLF	Co-funding
<i>Systems houses</i>				
Al Hakim System House Co.	133.33	319,000	319,000	0
Baalbaki for Trade and Industry	153.34	319,000	319,000	0
Sub-total	286.67	638,000	638,000	0
<i>Downstream users manufacturing refrigeration insulation foam</i>				
Al Salam Refrigerators	30.20	180,400	169,400	11,000
Al Bassmaji Co	25.63	180,400	169,400	11,000
Laalou Industrial Domestic Appliances	23.13	180,400	169,400	11,000
Al Kamal Co	12.01	180,400	169,400	11,000
Atassi & Darouzy RAC	4.60	180,400	95,150	85,250
Abd Al Salam Zarrour Co.	18.00	180,400	169,400	11,000
Ammar Refrigerators	12.93	180,400	169,400	11,000
Golden Eagle (Al Reem)	7.77	180,400	169,400	11,000
Emirates for Refrigeration	4.63	180,400	88,825	91,575
Al Taki Refrigeration Co.	3.70	180,400	71,500	108,900
Peneson Gold	3.60	180,400	62,700	117,700
<i>Technical assistance for three small enterprises</i>				
AL Najma Group for Industry and Trade	1.07	10,000	10,000	0
Al Shahab	0.40	5,000	5,000	0
Syrian Center for Commercial RAC Industry	0.20	3,000	3,000	0
Sub-total	147.88	2,002,400	1,521,975	480,425
<i>Downstream users manufacturing sandwich panel</i>				
Al Atassi Manufacturing and Trading	30.87	308,000	297,000	0
Baalbaki Industry	33.46	308,000	297,000	0
Sub-total	64.33	616,000	594,000	0
Total	212.21	3,256,400	2,753,975	480,425

30. The planned project duration is 30 months.

Phase-out of HCFC-22 in the manufacturing of domestic ACs at Baalbaki Industries

Background

31. The HCFC-22 consumption in the AC manufacturing sector has decreased significantly from the baseline in the last 12 years. In 2021, the HCFC-22 consumption of 150 mt in AC manufacturing is 61 per cent of the amount in the baseline (243.34 mt) in the sector, as shown in table 2. Based on the survey and field visit conducted by UNIDO, only one enterprise, Baalbaki Industries, is eligible for funding. The company was established in 2006, is 100 per cent owned by Syrian nationals, and manufactures domestic appliances including split ACs for comfort cooling. The AC units have a capacity of 1-2 refrigeration tonnes and are mainly sold to the local market. The company does not produce AC units using other refrigerants.

32. The enterprise manufactured 26,500 units of split ACs and consumed 32.1 mt of HCFC-22 in 2021. The HCFC-22 consumption and production output are contained in table 9.

Table 9. HCFC-22 consumption and production output in Baalbaki Industries

Model capacity	Charge (kg/unit)	2017	2018	2019	2020	2021
HCFC-22 consumption (mt)		57.6	72	33	34.5	32.1
<i>Annual production output (unit/year)</i>						
1.0 (refrigeration tonne)	1.04	14,000	18,000	18,000	18,000	18,000

Model capacity	Charge (kg/unit)	2017	2018	2019	2020	2021
1.5 (refrigeration tonnes)	1.5	16,000	7,000	8,000	7,000	7,000
2.0 (refrigeration tonnes)	1.9	10,000	2,000	2,000	1,500	1,500
Total production		40,000	27,000	28,000	26,500	26,500

Technology selection

33. R-290 was selected as the alternative technology for the conversion of the manufacturing line because it is a low-GWP alternative and has low operating costs.

Incremental costs

34. The ICCs for the conversion include product model redesign, replacement of storage tank, charge machine, transfer pumps, vacuum pumps, leak detection, safety systems, and test, trials, commission and training, as shown in table 10.

Table 10. Detailed costs of the conversion of AC manufacturing at Baalbaki Industries (US \$)

Item	Qty	Unit cost	Total	Beneficiary share	Cost to MLF
Production					
Model redesign/technology transfer	3	70,000	210,000		210,000
Refrigerant charging machine with safety features	1	70,000	70,000		70,000
Refrigerant transfer system	1	20,000	20,000		20,000
Leak detectors	5	10,000	50,000		50,000
Refrigerant storage	1	20,000	20,000		20,000
Replacement of vacuum pump	10	4,000	40,000		40,000
Sub-total			410,000		410,000
Plant safety					
Safety system: ventilation and exhaust system; gas sensors, alarm and monitoring system; fire protection and control system; lightning protection and grounding	1	25,000	75,000		135,000
Safety audit and certification	1	30,000	30,000		30,000
Sub-total			165,000		165,000
General works: truck receiving area preparation, and firefighting water reservoir	1	25,000	25,000	25,000	0
Trial, prototyping and commission and training		25,000	25,000		25,000
Total			625,000	25,000	600,000
Contingencies (10 per cent)					60,000
Total ICC cost					660,000
IOC cost (calculated at US \$6.3/kg)					209,160
Total project cost					869,160
Co-financing by beneficiary				412,860	
Cost requested to the Fund					456,300

35. The IOC amount for the conversion is calculated at US \$209,160, at US \$6.3/kg. The total cost of the project is calculated at US \$869,160. The enterprise is providing US \$412,860 and requesting US \$456,300 from the Fund. The overall cost-effectiveness of this project for the Fund is US \$13.74/kg.

A summary of the conversion projects in the PU foam and AC manufacturing sectors

36. The total cost of the conversion projects amounts to US \$3,531,143 for the phase-out of 286.67 mt (31.53 ODP tonnes) of HCFC-141b (of which 212.21 mt (23.34 ODP tonnes) is eligible) in the PU foam sector and 33.20 mt (1.83 ODP tonnes) of HCFC-22 in the AC manufacturing sector, including PMU costs, with a cost effectiveness (C/E) of US \$14.41/kg, as summarized in table 11 below. The cost of the PMU is calculated at US \$320,868, as detailed in paragraph 37.

Table 11. A summary of the conversion project in the PU foam and AC manufacturing sectors

Sector/Application	Substance	Alternative	Consumption		Funding (US \$)			C/E
			MT	ODPt	ICC	IOC	Total	US \$/kg
<i>PU foam systems houses</i>								12.98
Baalbaki for Trade and Industry	HCFC-141b	cyclopentane	153.34	16.87	319,000	0	319,000	
Munir Al Hakim	HCFC-141b	cyclopentane	133.33	14.67	319,000	0	319,000	
<i>Downstream users</i>								
14 enterprises in refrigeration sector	HCFC-141b	cyclopentane	147.88	16.23	1,521,975	0	1,521,975	
Two enterprises in sandwich panel	HCFC-141b	cyclopentane	64.33	7.07	594,000	0	594,000	
Sub-total PU foam			212.21	23.34	2,753,975	0	2,753,975	
Baalbaki AC manufacturing	HCFC-22	R-290/HFC-32	33.20	1.83	340,740	115,560	456,300	13.74
Total			245.06	25.13	3,094,750	115,560	3,210,275	13.08
PMU							320,868	
Total cost (US \$)							3,531,143	14.39

PMU cost

37. When stage I of the HPMP was approved, a PMU was established to manage activities in the servicing sector mainly implemented by UNEP. Additional PMU component will be added to the existing PMU for UNIDO and will operate for three years to support the implementation of the investment projects. Considering the large number of enterprises to be converted, and the non-eligible enterprises to be phased out through technical assistance, a total of US \$320,868 was requested for the PMU cost as originally submitted. The breakdown of the PMU costs is shown in table 12 below:

Table 12. PMU budget for the investment component in the Syrian Arab Republic

Item	Cost (US \$)	Annual cost (US \$)
Staff / Consultants (national project coordinator and national foam expert)	162,000	54,000
Office rent	27,000	9,000
Travel including terminal charges	52,668	17,556
Meetings/ workshops	60,000	20,000
Other/Miscellaneous	19,200	6,400
Total	320,868	106,956

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Progress report on the implementation of the first tranche of stage I in the refrigeration servicing sector

38. The Government of the Syrian Arab Republic has already issued HCFC import quotas for 2022 at 81.54 ODP tonnes, which is below the control target under the Montreal Protocol and in the Agreement. The quota for 2023 will be issued in December 2023 at a similar level.

39. The Secretariat noted that the awareness-raising and technical assistance activities for the manufacturing sector in the first tranche have facilitated the collection of more accurate data and the preparation of sound umbrella projects. Through the workshops, the manufacturers were informed of recent technology developments, the alternatives available, low-GWP technologies for the replacement of HCFCs, and the planned bans on the use of HCFCs in the manufacturing sector, which has laid a foundation for the implementation of the umbrella projects.

Regulatory measures to support the sustainability of conversions

40. The Secretariat noted the complete phase-out of HCFCs in the manufacturing sector proposed in the umbrella projects, and discussed with the Government through UNEP the regulatory measures to support the sustainability of the complete HCFC phase-out in the foam and AC manufacturing sectors, such as policies banning the import and the use of HCFCs in line with decision 79/25.⁴ UNEP reported that the Government recognized the need to have regulatory measures to ensure the sustainability of the planned conversions and to facilitate the shift towards long-term alternatives, and agreed to establish the following regulatory measures under the HPMP:

- (a) A ban on the import of HCFC-141b both pure and in pre-blended polyols when the conversions are completed, no later than 1 January 2027;
- (b) A ban on the use of HCFC-141b pure and in pre-blended polyols in foam manufacturing once the conversions in foam manufacturing are completed, no later than 1 January 2027;
- (c) A ban on the import of HCFC-22-based AC equipment no later than 1 January 2027;
- (d) A ban on the use of HCFC-22 in manufacturing AC equipment once the conversion of the AC manufacturing project is completed, no later than 1 January 2027; and
- (e) A ban on the import of HCFC-142b no later than 1 January 2027.

41. The Government will also consider the development of economic incentives to promote the market adoption of the AC equipment based on low-GWP technologies.

42. The Secretariat discussed with UNEP and UNIDO about the phase-out of HCFCs in ineligible enterprises in the manufacturing sector including XPS foam sector. UNEP reported that the Government is willing to work with the industries and is committed to phase out the consumption in the manufacturing sector; it will develop and implement various regulatory measures to support the conversion projects, conduct awareness raising activities on the HCFC phase out in the manufacturing sector, inform the enterprises on the upcoming regulatory measures and assist them in transition to low-GWP alternatives when phasing out HCFCs.

Technology selection

43. The Secretariat discussed technology related issues, barriers to market adoption of the alternatives and the smooth transition to non-HCFC, low-GWP technologies in the AC sector during HCFC phase-out. To ensure sustainability of the conversion and market adoption of the alternatives in a sector where technology adoption is rapidly changing given evolving standards and regulations, it was agreed that both R-290 and HFC-32 technology will be considered for conversion of the AC manufacturing line. Given the uncertainty in market adoption of R-290 technology, it was agreed that the conversion of AC manufacturing will be scheduled in the third tranche in 2024. A feasibility study and assessment of R-290 and HFC-32 technology will be conducted prior to the conversion, to select the most suitable one to ensure the sustainability of the conversion. Meanwhile training and certification of technicians, development of standards in the safe use of low-GWP alternatives and awareness-raising activities will be implemented in the servicing sector to prepare the country for the adoption of the alternatives to be decided at a later time.

⁴ The Executive Committee decided to request bilateral and implementing agencies together with Article 5 countries, when preparing funding requests for complete HCFC phase-out in a manufacturing sector, to include the necessary regulatory measures to ensure the sustainability of complete HCFC phase-out in that specific sector, such as policies banning the import and/or the use of HCFC (decision 79/25).

Cost-related issues*PU foam sector*

44. Upon discussion on the incremental cost of each conversion, the following reductions were applied to the conversion of two systems houses: the cost of the preparation workshop (US \$10,000) was removed; the cost of the cyclopentane tank with accessories was reduced to US \$75,000; the contingency amount was applied only to equipment; and the cost of installation, test, trial and training was reduced to US \$25,000. The cost of conversion was calculated as US \$297,500 per systems house, at a total cost of US \$559,000.

45. The cost for conversion of 14 downstream users in refrigeration sector was also adjusted. For the three enterprises that did not have baseline foam dispensers, the cost of conversion was reduced to US \$90,000 for two enterprises and US \$85,000 for one enterprise. For the six small enterprises that consume less than 5 mt, the eligible funding is not sufficient to convert them to cyclopentane technology due to the safety-related requirements. It was agreed to only provide US \$25,000 for technical assistance to guide them to convert to low-GWP technologies (cyclo-pentane pre-blended polyols, HFOs, water blown technology and methyl formate, etc.) when phasing out HCFC-141b. The total cost for the conversion of 14 downstream end-users in the refrigeration sector was calculated at US \$1,062,750 to phase out 147.88 mt (16.27 ODP tonnes) of HCFC-141b.

46. The costs for two companies producing discontinuous panel were reduced as follows: the costs for the pre-mixing unit (US \$50,000) and buffer tank (US \$10,000) were removed as these items are not required for manufacturing with pre-blended cyclopentane, and contingency for technical assistance (US \$2,000) was also removed; and the cost of press modification for Al Atassi was reduced by US \$5,000 as one press was purchased in 2009. After the reductions, the cost of conversion was calculated at US \$229,000 for Baalbaki Industry and US \$223,500 for Al Atassi, for a total of US \$452,500.

47. The agreed cost for the conversion of the PU foam sector is US \$2,074,250 to phase out 212.21 mt of eligible HCFC-141b at a cost-effectiveness of US \$9.77/kg, in accordance with the cost guidelines for HCFC phase-out (decision 74/50). In addition, a total of 74.46 mt of HCFC-141b not eligible for funding will be phased out without Multilateral Fund assistance. A summary of the costs for the conversion of PU foam eligible enterprises is presented in table 13.

Table 13. A summary of the revised conversion costs for the PU foam sector umbrella project

Sectors/Enterprises	Phase-out of HCFC-141b (mt)	Revised cost (US \$)	C/E (US \$/kg)
<i>Systems house</i>			
Al Hakim System House Co.	*	279,500	
Baalbaki for Trade and Industry	*	279,500	
Sub-total		559,000	
<i>Downstream users manufacturing refrigeration insulation foam</i>			
Al Salam Refrigerators	30.20	169,400	5.61
Al Bassmaji Co	25.63	169,400	6.61
Laalou Industrial Domestic Appliances	23.13	169,400	7.32
Al Kamal Co	12.01	169,400	14.10
Atassi & Darouzy RAC	4.60	95,150	20.68
Abed Al Salam Zarrouy Co.	18.00	90,000	5.00
Ammar Refrigerators	12.93	90,000	6.96
Golden Eagle (Al Reem)	7.77	85,000	10.94
<i>Technical assistance for six small enterprises</i>			
Emirates for Refrigeration	4.63	25,000	
Al Taki Refrigeration Co.	3.70		
Peneson Gold	3.60		
AL Najma Group for Industry and Trade	1.07		
Al Shahab	0.40		
Syrian Center for Commercial RAC Industry	0.20		
Sub-total	147.88	1,062,750	7.19

Sectors/Enterprises	Phase-out of HCFC-141b (mt)	Revised cost (US \$)	C/E (US \$/kg)
<i>Downstream users manufacturing sandwich panel</i>			
Al Atassi Manufacturing and Trading	30.87	223,500	7.60
Baalbaki Industry	33.46	229,000	7.17
Sub-total	64.33	452,500	7.03
Total	212.21	2,074,250	9.77

* HCFC-141b to be phased out by the systems houses through the project is shown in the downstream users

AC manufacturing sector

48. Upon analysis of the incremental costs included in the proposal,⁵ the costs for conversion of AC manufacturing were reduced as follows: charging machine to US \$60,000; leak detection to US \$10,000 for one leak detector only; vacuum pumps (only two) to US \$3,500 each; safety equipment to US \$100,000; model design to US \$25,000; and the contingency amount was applied to equipment only, resulting in a revised ICC of US \$346,200. The IOC amount was reduced from US \$6.3/kg to US \$3.6/kg based on the price difference between refrigerants, resulting in IOCs of US \$115,560. After adjustments, the total cost of conversion amounts to US \$461,760. It was agreed that US \$456,300 would be provided as originally requested.

PMU

49. The cost of the PMU for the conversion of PU foam and AC manufacturing was agreed at US \$177,139 to cover the costs of staff, consultancy, travel and meetings for coordination, implementation, monitoring and reporting of activities related to the conversion projects.

Agreed costs for the conversion in the PU foam and AC manufacturing sectors

50. The total cost of the conversion projects amounts to US \$2,707,689, including PMU, to phase out 212.21 mt (23.34 ODP tonnes) of HCFC-141b in PU foam sector and 33.20 mt (1.83 ODP tonnes) of HCFC-22 in the AC manufacturing sector as summarized in table 14 below.

Table 14. Agreed costs for the conversions in the PU foam and AC manufacturing sectors

Sector/Application	Substance	Alternative	Consumption		Funding (US \$)			C/E
			MT	ODPt	ICC	IOC	Total	US \$/kg
<i>PU foam systems houses</i>								
Baalbaki for Trade and Industry	HCFC-141b	cyclopentane	*	*	279,500	0	279,500	
Munir Al Hakim	HCFC-141b	cyclopentane	*	*	279,500	0	279,500	
<i>Downstream users</i>								
14 enterprises in refrigeration sector	HCFC-141b	cyclopentane	147.88	16.27	1,062,750	0	1,062,750	7.19
Two enterprises in sandwich panel	HCFC-141b	cyclopentane	64.33	7.08	452,500	0	452,500	7.03
Sub-total PU foam			212.21	23.34	2,074,250	0	2,074,250	9.77
Baalbaki Industries	HCFC-22	R-290/HFC-32	33.20	1.83	340,740	115,560	456,300	13.74
Total incremental costs			245.41	25.17	2,414,990	115,560	2,530,550	10.31
PMU							177,139	
Total cost			245.41	25.17			2,707,689	11.03

* HCFC-141b to be phased out by the systems houses through the project is shown in the downstream users

Impact on the climate

51. The investment projects will phase out 286.67 mt of HCFC-141b and 33.20 mt of HCFC-22 through conversions to cyclopentane in the PU foam sector and HFC-32 or R-290 in the AC manufacturing sector. The climate impact of the conversions in terms of reducing greenhouse gas (GHG) emissions is calculated at 282,370 CO₂-eq tonnes if replacing HCFCs with cyclopentane and R-290; if HCFCs are

⁵ Based on the conversion to HFC-32, as the most cost-effective option.

replaced by cyclopentane and HFC-32, the emission reduction from the conversion would amount to 268,731 CO₂-eq tonnes, as summarized in table 15 below.

Table 15. Climate impact of the conversion to R-290 and HFC-32 in the RAC manufacturing sector

Sector	Substance /replacement	HCFC Phase-out (mt)	GHG emissions (CO ₂ -eq tonnes)		
			Before	After	Reduction
PU foam	HCFC-141b/cyclopentane	286.67	209,286	1,443	207,842
AC manufacturing					
Direct	HCFC-22/R-290	33.20	60,296	70	60,226
Indirect			391,826	377,524	14,302
Sub-total AC				452,122	377,594
Total emission reduction if converted to cyclopentane and R-290 technology					282,370
Direct	HCFC-22/HFC-32	33.20	60,296	38	60,258
Indirect			391,826	391,195	631
Sub-total AC				452,122	391,233
Total emission reduction if converted to cyclopentane and HFC-32 technology					268,731

Co-financing

52. The investment projects include many small foam enterprises with consumption below 20 mt. Due to the limited funding eligible for the conversion of the manufacturing capacity, co-funding will need to be provided by these enterprises. As an in-kind contribution, the Government will support the development of policies, regulations, and standards to support the sustainable phase-out of HCFCs through the investment project.

Revision of the Agreement

53. The Agreement between the Government of the Syrian Arab Republic and the Executive Committee for stage I of the HPMP has been updated to include in Appendix 2-A of the Agreement the funding of US \$2,707,689 for the umbrella projects, to deduct 78.88 ODP tonnes (please refer to table 3) from the starting point for aggregate reduction, to revise the penalty in Appendix 7-A of the Agreement based on the revised funding and the amount of phase-out, and to add a new paragraph 17 stating that the revised Agreement supersedes the Agreement reached between the Government of the Syrian Arab Republic and the Executive Committee at the 86th meeting of the Executive Committee. The text to be updated is contained in Annex I to the present document.

Gender policy implementation⁶

54. The country recognizes the importance of gender equality, women's empowerment and women's involvement in the implementation of activities. Gender concepts and approaches have been carefully taken into account by the project team during planning and in the implementation of all planned activities under the first tranche. Three female trainees attended the workshop on the RAC sector in August 2022; and five women attended the workshop on alternative technologies organized by UNIDO and UNEP's CAP programme. In line with the gender mainstreaming policies of the Multilateral Fund, UNEP and UNIDO will also consider gender mainstreaming and equity during implementation of the second tranche to encourage the full engagement of women in activities undertaken in both the servicing and manufacturing sectors, including planning, coordination, training, decision-making, consultation and advisory activities.

⁶ In line with decision 84/92(d), decision 90/48(c) encouraged bilateral and implementing agencies to continue ensuring that the operational gender mainstreaming policy was applied to all projects, taking into consideration the specific activities presented in table 2 of document UNEP/OzL.Pro/ExCom/90/37.

Sustainability of the HCFC phase-out and assessment of risks

55. The Secretariat discussed the potential risks for the successful implementation of the second tranche and the investment projects, in particular: the security situation in the country; partner capacity to implement the activities and enact regulatory measures; and the risk surrounding successful market adoption of the alternative technology in the AC manufacturing sector.

56. UNEP and UNIDO reported that the security situation in the country has improved since the last quarter of 2019 and implementation of the activities in the first tranche is progressing. The Secretariat also noted that UNIDO's consultants visited 51 enterprises across five regions to provide technical guidance on the alternative technologies to manufacturing enterprises, which indicates that the security risk at this moment appears to be low. To address the risk from an unanticipated deterioration of the security situation, it was agreed that the foam sector phase-out would start with the conversion of the two systems houses. UNIDO will only start the downstream user conversions once the systems house conversions have made significant progress.

57. To address the risk surrounding market adoption of the alternative technology (R-290 or HFC-32), the funding for the conversion of the AC manufacturing line at Baalbaki Industries was scheduled in the third tranche of stage I in 2024. The Secretariat noted that Syrian Arab Republic has ratified the Kigali amendment, it is expected that HFC consumption and the associated AC manufacturing will be controlled accordingly to support the adoption of low GWP technologies. It is also expected that the activities in the servicing sector, including training of technicians in the safe handling of flammable refrigerants, certification of technicians, development of safety standards, and awareness-raising activities will help to create an enabling environment for the use of flammable refrigerants. A feasibility study will also be conducted to assess the risk and suitability of the alternative to ensure the success of conversion.

58. Regarding the risk in partner capacity causing potential delays in project implementation and the development of regulatory measures, the Secretariat noted that the implementation of the first tranche is progressing, and UNEP reported that the Government has committed to developing the required regulatory measures to support the sectoral phase-out and market transition to low-GWP alternatives. UNEP will monitor the risk of delay in implementation and help the country through a capacity assistance programme if needed.

Conclusion

59. The Syrian Arab Republic has established an operational licensing and quota system to control the import and export of HCFCs and met the Montreal Protocol control target and the targets in the Agreement with the Executive Committee in 2020 and 2021. The implementation of the first tranche of stage I is progressing; training for customs officers has been planned and training for technicians has been conducted. The investment projects have been submitted in line with decision 86/83 and will contribute to the 67.5 per cent reduction in HCFC consumption in 2025. The Government has committed to developing regulatory measures to support the conversion of the manufacturing sector and facilitate the market uptake of the alternative technologies. The activities planned for the second tranche, including the development of policies and regulations to facilitate the introduction of low-GWP alternatives to HCFCs; the development of safety standards for the introduction of hydrocarbon and ammonia; as well as training and certification of technicians, will support the market transition of the manufacturing sector to low-GWP technologies.

RECOMMENDATION

60. The Executive Committee may wish to consider:

- (a) Noting:
 - (i) The progress report on the implementation of the first tranche of stage I of the HCFC phase-out management plan (HPMP) for the Syrian Arab Republic;
 - (ii) The commitment of the Government of the Syrian Arab Republic to develop the following regulatory measures under the HPMP to ensure sustainability of the phase-out of HCFCs in the manufacturing sectors:
 - a. A ban on the import of HCFC-141b both in pure and in pre-blended polyols when the conversions are completed, no later than 1 January 2027;
 - b. A ban on the use of HCFC-141b in pure and in pre-blended polyols in foam manufacturing once the conversions in foam manufacturing are completed, no later than 1 January 2027;
 - c. A ban on the import of HCFC-22-based AC equipment no later than 1 January 2027;
 - d. A ban on the use of HCFC-22 in manufacturing AC equipment once the conversion of AC manufacturing is completed, no later than 1 January 2027;
 - e. A ban on the import of HCFC-142b no later than 1 January 2027;
 - (iii) That the Fund Secretariat has updated the Agreement between the Government of the Syrian Arab Republic and the Executive Committee, as contained in Annex I to the present document, specifically: Appendices 2-A and 7-A, based on the inclusion of the investment projects to phase out HCFCs in the polyurethane foam and air-conditioning manufacturing sectors in line with decision 86/93(e); and paragraph 17, that has been added to indicate that the updated Agreement superseded that reached at the 86th meeting;
- (b) Deducting 78.88 ODP tonnes of HCFCs from the remaining HCFC consumption eligible for funding; and
- (c) Approving the second tranche of stage I of the HPMP for the Syrian Arab Republic, and the corresponding 2023-2024 tranche implementation plan, at the amount of US \$2,439,810, consisting of US \$418,100, plus agency support costs of US \$49,448 for UNEP; and US \$1,843,236 plus agency support costs of US \$129,026 for UNIDO.

Annex I

TEXT TO BE INCLUDED IN THE DRAFT UPDATED AGREEMENT BETWEEN THE GOVERNMENT OF THE SYRIAN ARAB REPUBLIC AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS IN ACCORDANCE WITH STAGE I OF THE HCFC PHASE-OUT MANAGEMENT PLAN

(Relevant changes are in bold font for ease of reference)

17. This updated Agreement supersedes the Agreement reached between the Government of the Syrian Arab Republic and the Executive Committee at the 86th meeting of the Executive Committee.

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2010	2013-2014	2015-2019	2020-2021	2022-2023	2024	2025	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	n/a	135.03	121.52	87.77	87.77	87.77	43.88	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	n/a	135.03	121.52	87.77	87.77	87.77	43.88	n/a
2.1	Lead IA (UNEP) agreed funding (US \$)	0	0	0	238,428	418,100	398,200	154,548	1,209,276
2.2	Support costs for Lead IA (US \$)	0	0	0	28,199	49,448	47,095	18,278	143,020
2.3	Cooperating IA (UNIDO) agreed funding (US \$)	1,465,361	0	0	351,608	1,843,236	864,453	0	4,524,658
2.4	Support costs for Cooperating IA (US \$)	109,902	0	0	24,613	129,026	60,512	0	324,053
3.1	Total agreed funding (US \$)	1,465,361	0	0	590,036	2,261,336	1,262,653	154,548	5,733,934
3.2	Total support costs (US \$)	109,902	0	0	52,812	178,474	107,607	18,278	467,073
3.3	Total agreed costs (US \$)	1,575,263*	0	0	642,848	2,439,810	1,370,260	172,826	6,201,007
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)								28.56
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)								4.98
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)								26.96
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)								59.81
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)								7.90
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)								0
4.3.1	Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes)								6.82
4.3.2	Phase-out of HCFC-142b to be achieved in previously approved projects (ODP tonnes)								0
4.3.3	Remaining eligible consumption for HCFC-142b (ODP tonnes)								0

*Approved at the 62nd meeting.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$107 per ODP kg 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.
