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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
Item 9(c) of the provisional agenda¹

PROJECT PROPOSAL: JORDAN

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

Phase-out

- HCFC phase-out management plan (stage II, third tranche)

World Bank and
UNIDO

¹ UNEP/OzL.Pro/ExCom/91/1

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

Jordan

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage II)	World Bank (lead), UNIDO	77 th	50% phase-out by 2022

(II) LATEST ARTICLE-7 DATA (Annex C Group I)	Year: 2021	9.16 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				0.28	8.88				9.16
HCFC-141b in imported pre-blended polyol		42.61							42.61

(IV) CONSUMPTION DATA (ODP tonnes)			
2009-2010 baseline:	83.0	Starting point for sustained aggregate reductions:	94.29
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved:	70.30	Remaining:	23.99

(V) ENDORSED BUSINESS PLAN		2022	2023	2024	Total
World Bank	ODS phase-out (ODP tonnes)	7.79	0.00	0.00	7.79
	Funding (US \$)	572,157	0	0	572,157
UNIDO	ODS phase-out (ODP tonnes)	0.97	0.00	0.00	0.97
	Funding (US \$)	71,085	0	0	71,085

(VI) PROJECT DATA			2016	2017	2018	2019	2020	2021	2022	Total
Montreal Protocol consumption limits			74.70	74.70	74.70	74.70	53.95	53.95	53.95	n/a
Maximum allowable consumption (ODP tonnes)			70.50	66.40	66.40	66.40	53.95	53.95	41.50	n/a
Funding agreed in principle (US \$)	World Bank	Project costs	526,956	0	1,013,554	0	0	534,726	0	2,075,236
		Support costs	36,887	0	70,949	0	0	37,431	0	145,267
	UNIDO	Project costs	392,171	0	540,849	0	0	66,435	0	999,455
		Support costs	27,452	0	37,859	0	0	4,650	0	69,961
Funds approved by ExCom (US \$)		Project costs	919,127			1,554,403*				2,473,530
		Support costs	64,339			108,808*				173,147
Total funds recommended for approval at this meeting (US \$)		Project costs							601,161*	601,161
		Support costs							42,081*	42,081

* The second and third tranche had been expected in 2018 and 2021, respectively.

Secretariat's recommendation:	Blanket approval
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PROJECT DESCRIPTION

1. On behalf of the Government of Jordan, the World Bank as the lead implementing agency has submitted a request for funding for the third and final tranche of stage II of the HCFC phase-out management plan (HPMP), at a total cost of US \$643,242, consisting of US \$534,726, plus agency support costs of US \$37,431 for the World Bank, and US \$66,435, plus agency support costs of US \$4,650 for UNIDO.² The submission includes a progress report on the implementation of the second tranche, the verification report on HCFC consumption for 2019 to 2021, and the tranche implementation plan for 2023.

Report on HCFC consumption

2. The Government of Jordan reported a consumption of 9.16 ODP tonnes of HCFC in 2021, which is 89 per cent below the HCFC baseline for compliance. The 2017-2021 HCFC consumption is shown in table 1.

Table 1. HCFC consumption in Jordan (2017-2021 Article 7 data)

HCFC	2017	2018	2019*	2020	2021*	Baseline
Metric tonnes (mt)						
HCFC-22	428.86	468.09	305.00	530.00	166.53	985.30
HCFC-141b	0.00	0.00	60.00	0.00	0.00	261.70
Sub-total (mt)	428.86	468.09	365.00	530.00	166.53	1,247.00
HCFC-141b in imported pre-blended polyols	235.70	220.00	226.19	240.00	387.34	102.82**
ODP tonnes						
HCFC-22	23.59	25.74	16.78	29.15	9.16	54.20
HCFC-141b	0.00	0.00	6.60	0.00	0.00	28.80
Sub-total (ODP tonnes)	23.59	25.74	23.38	29.15	9.16	83.00
HCFC-141b in imported pre-blended polyols	25.93	24.21	24.88	26.40	42.61	11.31**

* At the time of finalization of the present document, the Ozone Secretariat was updating the country's 2019 and 2021 Article 7 data in line with the verification report submitted for those years.

** Average consumption between 2007 and 2009.

3. HCFC-22 consumption had been decreasing due to the implementation of HPMP activities including training on good servicing practices and controls of imports, and the adoption of HCFC-free alternatives, primarily R-410A in air-conditioning; the substantial increase in 2020 was caused by the surge of economic activity and equipment servicing as restrictions were lifted following the COVID-19 pandemic. With the exception of 2019, when the only systems house in the country imported pure HCFC-141b, the country ceased consuming pure HCFC-141b in 2016. Enterprises in the foam sector are consuming HCFC-141b contained in imported pre-blended polyols for their operations, with the increase in 2021 due to stockpiling in advance of the 1 January 2022 ban on the import of HCFC-141b pure and contained in pre-blended polyols.

Country programme (CP) implementation report

4. The Government of Jordan 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

² As per the letter of 13 October 2022 from the Ministry of Environment of Jordan to the World Bank.

the Montreal Protocol for 2019 to 2021 was correct (as shown in table 1 above). The verification concluded that Jordan had met the targets set out in the Agreement between the country and the Executive Committee. The verification report recommended improving the monitoring and control of HCFC imports by strengthening the coordination mechanisms between the national ozone unit (NOU) and customs through the use of an online reporting window.

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

Legal framework

6. A ban on the import of HCFC-141b in bulk and contained in imported pre-blended polyols came into effect on 1 January 2022; the ban was included under the current guidance on the use and import of controlled substances, published in the country's national gazette in March 2021. In line with the verification report recommendation, and as reported at the 84th meeting that the Government was considering measures for improving monitoring and reporting of HCFCs, the country has been developing a system within the customs department allowing NOU approvals of HCFC imports to be obtained online, improving monitoring and control of imports and reducing reporting discrepancies; the online reporting window was expected to be launched in January 2023.

Manufacturing sector

7. Stage II included the conversion of three large enterprises and 43 small- and medium-sized enterprises (SMEs) in the polyurethane (PU) foam manufacturing sector, six enterprises in spray foam applications, and the foam manufacturing at 22 refrigeration manufacturing enterprises. Four enterprises in PU foam manufacturing and the six enterprises in spray foam applications have completed their conversion. Two further enterprises had signed sub-grant agreements (SGAs); one of those enterprises was expected to complete its conversion by March 2023, while the other enterprise had decided to delay its conversion to cyclopentane as it faced a challenging financial situation due to the COVID-19 pandemic and would temporarily convert to hydrofluoroolefin (HFO)-based formulations. The status of implementation of foam enterprises is shown in table 2.

Table 2. Status of conversion of enterprises manufacturing foam with SGAs under stage II of the HPMP

Name of Enterprise	HCFC-141b consumption		Application	Technology selected	Status of implementation
	mt	ODP tonnes			
Jordan Pioneer	23.80	2.62	Continuous panel	Cyclopentane	Complete
Al Qanadeel	12.00	1.32	Discontinuous panel	Cyclopentane*	Conversion paused; plans to temporarily convert to HFO-based technology
Al Safa for Insulated Boards	35.00	3.85	Discontinuous panel	Cyclopentane*	Complete
Prefabricated Building	11.83	1.30	Discontinuous panel	Cyclopentane*	Complete
Yousef Workshop	15.50	1.71	Discontinuous panel	Cyclopentane*	Complete
Abu Haltam	17.00	1.87	Domestic refrigeration	Cyclopentane*	SGA signed and equipment ordered; expected completion by March 2023
AL Siham	17.67	1.94	Spray foam	HFO	Complete
AL Jordan	7.50	0.83	Spray foam	HFO	Complete

Name of Enterprise	HCFC-141b consumption		Application	Technology selected	Status of implementation
	mt	ODP tonnes			
AL Watan	13.20	1.45	Spray foam	HFO	Complete
AL Rafayah	13.30	1.46	Spray foam	HFO	Complete
Durt AL-ostool	6.00	0.66	Spray foam	HFO	Complete
Fathi Abu Arga	21.33	2.35	Spray foam	HFO	Complete
Total	194.13	21.36			

* Change of technology from HFO-1233zd(E) to cyclopentane approved in decisions 83/24 and 86/25.

8. The World Bank provided technical assistance to SMEs through a systems house for their transition to HFO-based formulations. Demonstration workshops were held on HFO-based and water-based foam materials, and 25 sets of HFO-blended polyols and five sets of water-based polyols³ were supplied to select enterprises for testing, evaluation, and commercial production. The systems house collected feedback on the performance and quality of the formulations and determined the performance of the new formulations to be acceptable; additional materials will be supplied based on HCFC-141b consumption and eligible incremental operating costs (IOCs).

Refrigeration servicing sector

9. Activities in the servicing sector were delayed due to effects from the COVID-19 pandemic. Four national experts were recruited to develop the training curricula for refrigeration and air-conditioning technicians, customs and enforcement officers, and vocational schools; and the certification system. The (voluntary) certification system was implemented in 2021, offering certification to trained technicians and maintenance workshops. Under a contract with the Vocational Training Center (VTC), training was held for 40 customs officers on monitoring and reporting of HCFC consumption, and 20 trainers and 80 technicians on good servicing practices and the safe use of flammable refrigerants, with the training of a further 20 customs officers and 20 technicians planned by December 2022. Three reclamation centres were selected and procurement and delivery of equipment for the centres was expected to take place in November 2022, including portable recycling and recovery machines, leak detector scales, and manifold cylinder scales; procurement of refrigerant identifiers has been delayed due to the pandemic and will be executed as soon as a supply of identifiers becomes available. The procurement of portable recovery and recycling machines, leak detectors scales, manifold cylinders and spare parts for 50 service shops was ongoing. Three workshops were organized by the NOU to raise awareness in the servicing sector on alternative refrigerants.

Project implementation and monitoring unit (PMU)

10. The PMU, located within the NOU, manages implementation of stage II through coordination with stakeholders and consultations with the industry on project implementation; organizing study tours; preparation, implementation, and review of the work programmes; preparation of reports as required by the implementing agencies and the Executive Committee; financial management; development and maintenance of management information systems; facilitating project supervision by the implementing agencies; and performance and financial audit. PMU activities implemented under the second tranche also included technical assistance support to SMEs in foam applications and coordinating the implementation of activities in the servicing sector. The PMU comprises two staff members managing PMU activities, supported by the finance and procurement officer of the NOU. Disbursements for the PMU under the second tranche total US \$56,283 (US \$26,698 for UNIDO and US \$29,585 for the World Bank). Table 3 presents the budgets and expenditures for the PMU component of stage II to date.

³ Change of technology from from HFO-1233zd(E) to water-blown technology approved in decision 87/12.

Table 3: PMU expenditures during implementation of the first and second tranches (US \$)

Activity	World Bank			UNIDO		
	Budget	Disbursed	Balance	Budget	Disbursed	Balance
Staff costs	94,280	73,910	20,370	80,000	71,919	8,081
Consultant costs	20,000	14,444	5,556	0	11,698	(11,698)
Travel	7,000	11,825	(4,825)	20,000	11,591	8,409
Communication	2,500	0	2,500	10,000	10,000	0
Meetings/workshops	14,351	8,595	5,756	0	0	0
Other	1,500	0	1,500	4,243	0	4,243
Total	139,631	108,774	30,857	114,243	105,208	9,035

Level of fund disbursement

11. As of August 2022, of the US \$2,473,530 approved so far, US \$1,316,106 had been disbursed (US \$645,226 for the World Bank and US \$670,880 for UNIDO), as shown in table 4. The balance of US \$1,157,424 will be disbursed in 2023.

Table 4. Financial report of stage II of the HPMP for Jordan (US \$)

Agency	First tranche		Second tranche		Total		
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed	Balance
World Bank	526,956	431,347	1,013,554	213,879	1,540,510	645,226	895,284
UNIDO	392,171	371,541	540,849	299,339	933,020	670,880	262,140
Total	919,127	802,888	1,554,403	513,218	2,473,530	1,316,106	1,157,424
Disbursement rate (%)	87		33		53		

Implementation plan for the third and final tranche of stage II of the HPMP

12. The following activities will be implemented under the third tranche in 2023:

- (a) Signing of SGAs and conversion of four foam manufacturing enterprises,⁴ resulting in the phase-out of 59.8 mt (6.58 ODP tonnes) of HCFC-141b contained in pre-blended polyols; and the conversion of any remaining eligible foam manufacturing enterprises (World Bank) (US \$489,947);
- (b) Continued technical assistance and support activities to SMEs through the systems house in introducing new HFO formulations, including workshops and site visits to support the conversions; and support to the remaining eligible SMEs (World Bank) (US \$21,513); and
- (c) Implementation of servicing sector activities that includes training of five trainers in a one-week online training followed by practical training in Austria on current standards and regulations, refrigerant characteristics, latest technologies, and advanced energy efficiency operations, in addition to good service practices and the safe use of flammable refrigerants; training of 40-60 technicians on good service practices and the safe use of flammable refrigerants; and procurement of five refrigerant identifiers (UNIDO) (US \$55,000).

13. Activities related to the PMU include coordinating implementation of planned activities in the foam sector, including technical assistance support to SMEs in foam applications, and coordinating implementation of activities in the servicing sector. Two staff members, supported by the finance and

⁴ Jordan Manufacturing and Services Solutions (30.0 mt), Jordan Light Vehicle Manufacturing LLC (15.0 mt), Abdin Industrial (8.8 mt), and Ideal Solar (6.0 mt).

procurement officer of the NOU, will manage PMU activities. Table 5 provides information on budget under the PMU component for UNIDO and World Bank, totalling US \$34,701.

Table 5: PMU budgets for the third tranche of the HPMP (US \$)

Activity	Budget (World Bank) (US \$)	Budget (UNIDO) (US \$)
Staff costs	15,000	0
Consultant costs	5,000	11,435
Travel	0	0
Rent	0	0
Communication	0	0
Meetings/workshops	3,266	0
Other	0	0
Total	23,266	11,435

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Verification report

14. While the 2019 verification report differentiated between imports of HCFC-141b pure and contained in pre-blended polyols, the 2020 and 2021 verification reports did not. The independent verifier submitted revised verification reports for those years confirming that all HCFC-141b imported in the country for those years were contained in pre-blended polyols. Future verification reports should make clear if a controlled substance was imported pure or contained in pre-blended polyols as that distinction would affect the country's calculated consumption. This would no longer be a concern for subsequent HCFC verification reports for Jordan as the country banned the import of both pure and pre-blended HCFC-141b on 1 January 2022.

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

Legal framework

15. The Government of Jordan has already issued HCFC import quotas for 2022 and 2023 at 22.00 ODP tonnes, which is lower than the Montreal Protocol control targets.

Manufacturing sector

16. Regarding the completed conversion of the six spray foam manufacturing enterprises, UNIDO confirmed that it had disbursed IOCs in line with decision 77/35 and that the enterprises did not face challenges purchasing HFO-based pre-blended polyols.

17. Noting the ban on the import of HCFC-141b in bulk and contained in imported pre-blended polyols that went into effect on 1 January 2022, the World Bank confirmed that remaining eligible enterprises to be assisted under the project were still consuming HCFC-141b either from their own stock or from existing stock held by local foam suppliers. Given the limited time remaining before the date of completion of the project, the Secretariat and the World Bank discussed how to ensure as many eligible enterprises could be assisted as possible under the project, thereby further enabling the uptake of low-GWP alternatives in enterprises manufacturing foam in the country.

18. Regarding the proposal by Al Qanandeel to temporarily use HFO technology, the World Bank confirmed that the enterprise was financially viable, continued to manufacture PU foam, and had already purchased a high-pressure foam machine but was waiting until its financial situation improved before

completing its conversion to cyclopentane, which would require additional investments to enable the safe use of that alternative. Noting that the Executive Committee had already approved the enterprise's conversion to both cyclopentane and HFO technology,⁵ and recalling decision 84/77(b)(i), the Secretariat recommended that the enterprise be provided flexibility during implementation to use cyclopentane or HFO technology, on the understanding that the conversion would not be delayed, that any additional costs would be covered by the enterprises, and that the World Bank would report on the implementation of the technology chosen by the enterprise in the project completion report.

19. The Secretariat noted that two foam manufacturing enterprises (Enjaz Jordan for Steel Structure and Shams Al-ram Tri) were found not to be eligible and would not receive assistance from the Multilateral Fund for their conversion; that the COVID-19 pandemic had substantially affected Jordan's economy and that some enterprises, including those that manufactured foam, may have gone out of business; and recalled decision 77/45(b)(iii) wherein the Executive Committee agreed that the Government of Jordan would have flexibility in using the funds approved for the PU foam sector to achieve a smooth and efficient HCFC-141b phase-out in line with its Agreement with the Executive Committee. In line with that decision, the Secretariat recommended that if during implementation the World Bank found eligible enterprises that had been inadvertently omitted from stage II that were still consuming HCFC-141b pure or contained in pre-blended polyols from stocks, that the World Bank could assist those enterprises on the understanding that such enterprises are assisted in line with the agreed cost-effectiveness; that the conversion of assisted enterprises results in the phase-out of at least 27.60 ODP tonnes of HCFC-141b and 11.31 ODP tonnes of HCFC-141b contained in pre-blended polyols; that the World Bank would include the list of assisted enterprises and their associated phase-out in the project completion report; and that any remaining balances from the project be returned upon financial completion of the project.

Completion of stage II

20. The World Bank has confirmed that stage II for Jordan will be completed by 31 December 2023 in line with paragraph 14 of the Agreement.

Gender policy implementation⁶

21. The World Bank reported that gender mainstreaming was incorporated in all activities where possible. While trainings were especially offered to female technicians, the limited number of female technicians meant that it was not always possible to achieve gender balance. Gender disaggregated data from the project was not available.

Sustainability of the HCFC phase-out and assessment of risks

22. Risks to the successful conversion of enterprises that manufacture foam include delays in implementation and the limited participation of enterprises in the project. One challenge identified by the World Bank was the limited availability and high price of HFO foam blowing agents during 2020 and 2021, including due to the COVID-19 pandemic and global supply chain issues. Risks were mitigated by providing technical assistance, including study tours to neighbouring countries that increased knowledge of conversion projects to cyclopentane, including those that experienced lower operational costs and increased competitiveness; by using the flexibility permitted under the Agreement allowing enterprises to request a change of technology; by the Government managing the bulk procurement of HFO-1233zd(E) for SMEs to attract interest of regional foam suppliers and lower prices during the introductory period; and, as proposed by the Secretariat, by allowing the flexibility in implementation in line with decision 75/44(b)(iii)

⁵ The original technology approved for the enterprise was HFO-1233zd(E); the Executive Committee approved the change of technology to cyclopentane in decision 83/24.

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.

and in a similar manner as in decision 84/77(b)(i). The sustainability of the phase-out of HCFC-141b will be supported by the ban on imports of HCFC-141b pure and contained in pre-blended polyols. Risks to the successful implementation of activities in the servicing sector, such as delays in finalizing arrangements with the VTC, administrative procedures to secure the required tax exemption for equipment procured under the project, and engagement with service workshops, were mitigated using experts in the field that facilitated discussion and outreach.

23. The risks due to the COVID-19 pandemic were not anticipated when stage II of the HPMP was approved at the 77th meeting and delayed the pace of implementation of the foam and the servicing sector plans, particularly in relation to activities that required face-to-face programmes and consultations. With the easing of COVID-19 restrictions in the country, those activities advanced; should restrictions need to be reinstated, the Government in consultation with the agencies and national stakeholders would work on undertaking online technical inputs to SMEs in the foam sector, online consultations with national stakeholders, online theoretical training combined with in-person practical sessions for service technicians and online meetings for the implementation of activities.

Conclusion

24. The verified 2019 to 2021 consumption of the country was within the targets stipulated in the Agreement between the country and the Executive Committee, and the import licensing and quota system is operational and will enable HCFC consumption reductions in line with the Montreal Protocol's phase-out schedule. The conversions of four PU foam manufacturing enterprises and of the enterprises in spray foam applications have been completed; additional conversions are ongoing or planned; and technical assistance to SMEs in the sector will enable the conversion to low-GWP alternatives. The 1 January 2022 ban on the import of HCFC-141b pure and contained in pre-blended polyols will help ensure the sustainability of the phase-out. Notwithstanding earlier delays, including due to the COVID-19 pandemic, activities in the servicing sector are progressing. The country's 2021 consumption was 89 per cent below the HCFC baseline for compliance, and 33 per cent of the second tranche and 53 per cent of the total funds approved have been disbursed. Stage II was approved prior to decision 84/92(d); the Secretariat expects that stage III will allow the Government and the agencies to plan and implement activities to more fully address the Multilateral Fund's gender policy.

RECOMMENDATION

25. The Fund Secretariat recommends that the Executive Committee:

- (a) Takes note of the progress report on the implementation of the second tranche of stage II of the HCFC phase-out management plan (HPMP) for Jordan; and
- (b) Requests the Government of Jordan, the World Bank and UNIDO to submit a progress report on the implementation of the work programme associated with the final tranche to the first meeting of the Executive Committee in 2024.

26. The Fund Secretariat further recommends blanket approval of the third and final tranche of stage II of the HPMP for Jordan, and the corresponding 2023 tranche implementation plan, at the funding levels shown in the table below, on the understanding that:

- (a) The enterprise Al Qanandeel would, in light of decision 77/45 and decision 83/24, have flexibility to use cyclopentane or HFO technology on the understanding that the conversion would not be delayed, that any additional costs would be covered by the enterprises, and that the World Bank would report on the implementation of the technology chosen by the enterprise in the project completion report; and

- (b) The World Bank could assist eligible foam manufacturing enterprises that had been inadvertently omitted from stage II that were still consuming HCFC-141b pure or contained in pre-blended polyols from stocks, on the understanding that such enterprises were assisted in line with the agreed cost-effectiveness; that the conversion of assisted enterprises resulted in the phase-out of at least 27.60 ODP tonnes of HCFC-141b and 11.31 ODP tonnes of HCFC-141b contained in pre-blended polyols; that the World Bank would include the list of assisted enterprises and their associated phase-out in the project completion report; and that any remaining balances from the project be returned upon financial completion of the project.

	Project title	Project funding (US \$)	Support costs (US \$)	Implementing agency
(a)	HCFC phase-out management plan (stage II, third tranche)	534,726	37,431	World Bank
(b)	HCFC phase-out management plan (stage II, third tranche)	66,435	4,650	UNIDO