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

**PROJECT PROPOSAL: 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, second tranche)

World Bank and  
UNIDO

## 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 <sup>th</sup>	50% by 2022

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2018	25.74 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2018	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22				1.93	23.82				25.74
HCFC-141b in Imported Pre-blended Polyol		24.21							24.21

(IV) CONSUMPTION DATA (ODP tonnes)			
2009 - 2010 baseline:	83.0	Starting point for sustained aggregate reductions:	94.29
CONSUMPTION ELIGIBLE FOR FUNDING (ODP tonnes)			
Already approved:	70.3	Remaining:	23.99

(V) BUSINESS PLAN		2019	2020	2021	Total
World Bank	ODS phase-out (ODP tonnes)	14.76		7.79	22.55
	Funding (US \$)	1,084,503		572,157	1,656,660
UNIDO	ODS phase-out (ODP tonnes)	7.88	0.00	0.97	8.85
	Funding (US \$)	578,709	0	71,085	649,794

(VI) PROJECT DATA			2016	2017	2018	2019*	2020	2021	2022	Total
Montreal Protocol consumption limits			74.7	74.7	74.7	74.7	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
Agreed funding (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	0	0	0	0	0	0	0	919,127
	Support costs	64,339	0	0	0	0	0	0	0	64,339
Total funds requested for approval at this meeting (US\$)	Project costs	0	0	0	1,554,403	0	0	0	0	1,554,403
	Support costs	0	0	0	108,808	0	0	0	0	108,808

\* The second tranche should have been submitted in 2018.

<b>Secretariat's recommendation:</b>	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 second tranche of stage II of the HCFC phase-out management plan (HPMP), at a total cost of US \$1,663,211, consisting of US \$1,013,554, plus agency support costs of US \$70,949 for the World Bank, and US \$540,849, plus agency support costs of US \$37,859 for UNIDO.<sup>1</sup> The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2016 to 2018 and the tranche implementation plan for 2020 to 2021.

### Report on HCFC consumption

2. The Government of Jordan reported a consumption of 25.74 ODP tonnes of HCFC in 2018, which is 69 per cent below the HCFC baseline for compliance. The 2014-2018 HCFC consumption is shown in Table 1.

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

HCFC	2014	2015	2016	2017	2018	Baseline
<b>Metric tonnes</b>						
HCFC-22	747.57	1,005.00	766.00	458.28	468.09	985.30
HCFC-141b	169.10	170.10	0.00	0.00	0.00	261.70
<b>Sub-total (mt)</b>	<b>916.67</b>	<b>1,175.10</b>	<b>766.00</b>	<b>458.28</b>	<b>468.09</b>	<b>1,247.00</b>
HCFC-141b in imported pre-blended polyols	150.00	180.00	225.00	235.70	220.00	102.82*
<b>ODP tonnes</b>						
HCFC-22	41.12	55.28	42.13	25.21	25.74	54.20
HCFC-141b	18.60	18.71	0.00	0.00	0.00	28.80
<b>Sub-total (ODP tonnes)</b>	<b>59.72</b>	<b>73.99</b>	<b>42.13</b>	<b>25.21</b>	<b>25.74</b>	<b>83.00</b>
HCFC-141b in imported pre-blended polyols	16.50	19.80	24.75	25.93	24.21	11.31*

\*Average consumption between 2007 and 2009.

3. HCFC-22 consumption is 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 (AC). HCFC-141b consumption in bulk is nil since 2016 as the only systems house importing HCFC-141b in bulk stopped importing the substance since that year. Enterprises in the foam sector are consuming HCFC-141b contained in imported pre-blended polyols for their operations.

### *Country programme (CP) implementation report*

4. The Government of Jordan reported HCFC sector consumption data under the 2018 CP implementation report which 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 for 2016 to 2018 was lower than the Agreement targets. However, HCFC consumption data in 2016 and 2017 was different from the data reported under Article 7 of the Montreal Protocol as shown in Table 2.

<sup>1</sup> As per the letter of 7 October 2019 from the Ministry of Environment of Jordan to the World Bank.

**Table 2. HCFC consumption report for 2016 and 2017**

Particulars	2016		2017	
	mt	ODP tonnes	mt	ODP tonnes
Verification report	762.55	<b>41.94</b>	428.86	<b>23.59</b>
Article 7 report (mt)	766.00	<b>42.13</b>	458.28	<b>25.21</b>
<b>Difference</b>	<b>(3.45)</b>	<b>(0.19)</b>	<b>(29.42)</b>	<b>(1.62)</b>

6. The Secretariat requested the World Bank to work with the Government to review consumption data in the verification report and determine whether the consumption data reported under Article 7 should be revised. Based on the verification report findings, the Government is considering measures for improving monitoring and reporting of HCFCs such as training, management information systems (MIS) strengthening on HCFC data.

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

##### *Legal framework*

7. The licensing and quota system for HCFC imports was updated in 2013 to ensure effective control over import and export of HCFCs. The Government continued to implement the licensing system and national regulations, particularly the prohibition of manufacturing and import of HCFC-22-based AC units and the mandatory minimum energy performance standard (MEPS) for AC equipment (as of December 2016), which prohibits marketing of equipment below the most energy-efficient category. The activities relating to the development of regulations to prohibit import of HCFC-141b in bulk and contained in imported pre-blended polyols by 1 January 2022 will start during the period 2020–2021.

##### *Polyurethane (PU) and spray foam manufacturing sector*

8. The PU foam sector plan includes the conversion of three large enterprises, 43 small-and medium-sized enterprises (SMEs) and six enterprises in spray foam applications. Sub-grant agreements (SGAs) have been signed with the following four enterprises in the PU foam manufacturing and six enterprises in the spray foam manufacturing, as shown in Table 3.

**Table 3. PU foam and spray foam enterprises under stage II of the HPMP**

Name of Enterprise	HCFC-141b consumption	
	mt	ODP tonnes
<b>PU foam</b>		
Al Qanadeel	12.00	1.32
Al Safa for Insulated Boards	35.00	3.85
Prefabricated Building	11.83	1.30
Yousef Workshop	15.50	1.71
<b>Sub-total</b>	<b>74.33</b>	<b>8.18</b>
<b>Spray foam</b>		
Fathi Abu Arga	21.33	2.35
AL Siham	17.67	1.94
AL Jordan	7.50	0.83
AL Watan	13.20	1.45
AL Rafayah	13.30	1.46
Durt AL-ostool	6.00	0.66
<b>Sub-total</b>	<b>79.00</b>	<b>8.69</b>
<b>Grand total</b>	<b>153.33</b>	<b>16.87</b>

9. In 2019, the PU foam enterprises undertook study tours to Egypt and the United Arab Emirates to understand technology performance and the supply situation of foam blowing agents with low global-warming potential (GWP) such as cyclopentane. Based on the consultations and inputs received, five PU foam manufacturing enterprises that are consuming more than 10 mt per annum, decided to convert to cyclopentane instead of HFOs and invest from their own resources, additional costs required for the conversion. This technology change was approved at the 83<sup>rd</sup> meeting (decision 83/24).

10. UNIDO organised study tours to Egypt and the United Arab Emirates with the six spray foam enterprises in 2018 for discussions on technical and operational aspects relating to the use of HFO-1233zd(E) in spray foam products and for observing performance of the blowing agents (HFO, CO<sub>2</sub>) in the suppliers' laboratories. After the study tours, two suppliers sent samples of HFO- and CO<sub>2</sub>-based foam systems for demonstration of spray foam on the roof of the Ministry of Environment. Based on the results, the six enterprises selected HFO-1233zd(E) as the foam blowing agent and signed an agreement with UNIDO. The conversion of these enterprises is expected to be completed by 2021.

11. The activities in the remaining enterprises using HCFC-141b in domestic refrigeration insulation foam and SMEs, including technical assistance for developing low-cost low-GWP formulations, testing and support for conversion to alternatives, would be implemented in 2020 and 2021.

#### *Commercial refrigeration manufacturing sector*

12. Conversion activities in 22 commercial refrigeration manufacturing enterprises that produce equipment like refrigerated cabinets, low-temperature display cabinets for supermarket cold rooms and convenience shops, are expected to be implemented in 2020 and 2021.

#### *Refrigeration servicing sector*

13. The initial steps relating to preparation of a national strategy for the refrigeration and air-conditioning servicing sector were undertaken by UNIDO in close consultation with the national ozone unit (NOU) and the project implementation and monitoring unit (PMU) at the Ministry of Environment; this was endorsed by relevant Ministries and other industry stakeholders in the servicing sector in June 2019. The main objective of the servicing sector strategy is to reduce the use of HCFC-22 through technician training and capacity building. The proposed activities include *inter alia*, training for customs officers, metrological and standard organisation, updating and developing training courses for technicians and vocational schools, recovery and reclamation project component, implementation of demonstration projects for the adoption of low-GWP and high energy efficiency options in cold rooms, awareness and outreach activities and regulations for the servicing sector for certification. The recruitment of technical experts for working on implementation of agreed activities is underway.

#### *PMU*

14. The PMU, located within the NOU manages implementation of stage II through: coordination with stakeholders and consultations with the industry on project implementation; organising study tours for foam enterprises to improve their understanding of alternative foam technologies and access to suppliers of new formulations; preparation, implementation, and review of the work programmes; preparation of reports as required by the implementing agencies and the Executive Committee; financial management to ensure effective use of the Multilateral Fund resources; development and maintenance of MIS; facilitating project supervision by the implementing agencies; and performance and financial audit.

15. Table 4 presents the budgets and expenditures for the PMU component.

**Table 4. Budgets and expenditures for the PMU (US \$)**

Particulars	World Bank			UNIDO		
	Total	First tranche	Disbursed	Total	First tranche	Disbursed
Staff costs	94,280	31,427	9,415	80,000	28,086	56,919
Consultant costs	20,000	5,000	0	0	0	0
Travel	7,000	4,624	0	20,000	10,000	11,591
Rent	0	0	0	0	0	0
Communication	2,500	0	0	10,000	0	0
Meetings/workshops	14,351	5,000	0	0	0	0
Others	1,500	500	0	4,243	0	0
<b>Total</b>	<b>139,631</b>	<b>46,551</b>	<b>9,415</b>	<b>114,243</b>	<b>38,086</b>	<b>68,510</b>

Level of fund disbursement

16. As of 7 October 2019, of the US \$919,127 approved so far (US \$526,956 for the World Bank and US \$392,171 for UNIDO), US \$190,711 (20.75 per cent) had been disbursed (US \$22,229 for the World Bank and US \$168,542 for UNIDO). The balance of US \$728,356 will be disbursed in 2020 and 2021<sup>2</sup>.

Implementation plan for the second tranche of the HPMP

17. The following activities will be implemented between January 2020 and December 2021:

- (a) Conversion of enterprises in the PU foam sector at the four enterprises with SGAs and signing SGAs with additional seven enterprises, including insulation foam for one domestic refrigerator manufacturing enterprise, which will result in the phase-out of 118.6 mt (13.05 ODP tonnes) of HCFC-141b; and coordination of data collection and implementation of conversion activities with SMEs. These activities would be completed in 2022 (World Bank) (US \$669,133, plus balances from the previous tranche);
- (b) Conversion in spray foam enterprise including coordination and implementation monitoring at the six enterprises (UNIDO) (US \$246,727);
- (c) Conversion of 22 commercial refrigeration manufacturing enterprises including coordination of data collection, technical support and implementation of conversion projects at the eligible enterprises to be completed in 2022 (World Bank) (US \$71,361);
- (d) Technical assistance and support activities to SMEs through a systems house for development of new HFO formulation(s) taking into consideration technical and economic aspects (World Bank) (US \$203,245); and
- (e) Implementation of servicing sector activities that includes training of 60 customs and enforcement officers on monitoring and reporting of HCFC consumption; training of 20 trainers and 100 technicians on good service practices and safe use of flammable refrigerants; setting-up of reclamation center including procurement of equipment (e.g., recovery machines, leak detectors, refrigerant scales and identifiers), and providing technical training for recovery and reclamation; and development of certification system in coordination with Jordan Institute of Standards and Metrology (JISM), Vocational Training Corporation (VTC), Civil Defense Directorate and Center for Accreditation and Quality Control (CAQA) (UNIDO) (US \$267,424, plus balances from the previous tranche).

<sup>2</sup> The World Bank informed that as of 18 November 2019, an additional US \$32,503 was disbursed, representing 24.29 per cent of the total funds approved so far.

18. The activities related to the PMU planned under the second tranche would include coordinating implementation of planned activities in the foam sector including technical assistance support for SMEs in foam applications and implementation of activities in the servicing sector. Two staff members supported by the finance and procurement officer of the NOU, would manage PMU activities. Table 5 provides information on budget under the PMU component for UNIDO and World Bank, totalling US \$96,513.

**Table 5: Budgets for PMU during implementation of the second tranche (US \$)**

<b>Budget</b>	<b>Budget – World Bank component</b>	<b>Budget – UNIDO component</b>
Staff costs	48,000	7,000
Consultant costs	10,000	12,000
Travel	2,315	4,000
Rent	0	2,000
Communication	1,500	1,000
Meetings/workshops	7,500	0
Others	500	698
<b>Total</b>	<b>69,815</b>	<b>26,698</b>

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

#### Stage I of the HPMP

19. The activities under stage I of the HPMP have been completed, and the project completion report was submitted on 6 November 2019. The World Bank informed that it would be completing financial and administrative procedures and return balances at the 85<sup>th</sup> meeting.

#### Report on HCFC consumption

20. In line with decision 82/31(c), the Government of Jordan submitted revised CP data for 2013, 2014, 2015 and 2017 consistent with Article 7 data for the respective years.

21. The Secretariat also requested clarification from the World Bank on why the consumption data in verification report for 2016 and 2017 is different from data reported under Article 7 of the Montreal Protocol for those years. The World Bank clarified that the Government agreed to revise the 2016 and 2017 Article 7 data in light of the findings of the 2016-2017 verification report.

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

##### *Legal framework*

22. The Government of Jordan has already issued HCFC import quotas for 2019 at 25.5 ODP tonnes, which is lower than the Montreal Protocol control targets and is allocated to 13 importers in the country.

##### *Refrigeration servicing sector*

23. The Secretariat noted a delay in the implementation of the activities in the servicing sector. The World Bank clarified that the preparatory work took longer than planned; however, the national coordinator has been recruited and the strategy has been developed with future actions identified. The activities are, therefore, expected to be implemented without further delays. Furthermore, the Government plans to introduce the regulations to certify technicians and service workshops at the end of 2020; to accelerate the programme for training of trainers and technicians in the servicing sector; and equip the reclamation centre. No activity is planned relating to the demonstration projects for low-GWP energy efficient technologies in the commercial refrigeration sector in the second tranche.

*PMU*

24. The Secretariat requested clarifications on why the staff costs in the UNIDO component were almost double the budget for the first tranche; UNIDO clarified that, in order to ensure continuity of work, the contracts for the staff and experts were issued for 2019; the Government and the agency are conscious of the total budgets for PMU and are taking all efforts to ensure that the budgets are not exceeded during implementation.

Sustainability of the HCFC phase-out

25. The project completion report for stage I, documented implementation of the conversion of three projects in the AC sector and implementation of activities in the servicing sector; regulations banning manufacturing and imports of HCFC-based residential AC equipment was implemented and effective as of 31 December 2016. In stage II, activities are progressing with conversion projects under implementation in large PU and spray foam manufacturing enterprises; planned technical assistance activities for the conversion of the remaining enterprises in the foam sector and SMEs, servicing sector activities including training of trainers, technicians, and customs officers, and implementation of regulations to control supply and use of HCFCs, will help further ensure the sustainability of the phase-out.

Conclusion

26. The verified 2016 to 2018 consumption of the country was within the targets stipulated in the Agreement between the country and the Executive Committee; import of HCFC-141b in bulk is nil since 2016. The import licensing and quota system is operational and will enable HCFC consumption reductions in line with the Montreal Protocol's phase-out schedule. Activities in PU and spray foam manufacturing in the large enterprises are progressing; activities in other foam applications and SMEs are proposed to be implemented in 2020 and 2021 with necessary technical assistance for adoption of low-GWP blowing agents. Although there were initial delays in finalising the servicing sector strategy which has now been resolved, the activities are proposed to be implemented in an expedited manner in the second tranche.

**RECOMMENDATION**

27. The Fund Secretariat recommends that the Executive Committee takes note of the progress report on the implementation of the first tranche of stage II of the HCFC phase-out management plan (HPMP) for Jordan; and further recommends blanket approval of the second tranche of stage II of the HPMP for Jordan, and the corresponding 2020–2021 tranche implementation plan, at the funding levels shown in the table below, on the understanding that:

- (a) The World Bank would provide an update at the 86<sup>th</sup> meeting on the status of implementation of the activities in stage II of the HPMP for Jordan;
- (b) The Treasurer would transfer the funding to the World Bank and UNIDO only upon confirmation by the Secretariat that the 2016 and 2017 consumption as reported under the country programme implementation report and under Article 7 of the Montreal Protocol had been amended to reflect the verified consumption for those years; and
- (c) If the confirmation referred to in sub-paragraph (b) had not been received by 15 January 2020, then no funding would be transferred and the second tranche could be resubmitted to a future meeting:



	<b>Project title</b>	<b>Project funding (US \$)</b>	<b>Support cost (US \$)</b>	<b>Implementing agency</b>
(a)	HCFC phase-out management plan (stage I, second tranche)	1,013,554	70,949	World Bank
(b)	HCFC phase-out management plan (stage I, second tranche)	540,849	37,859	UNIDO

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