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

**PROJECT PROPOSAL: 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 I, second tranche)

UNIDO and the  
World Bank

## PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

## Jordan

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase out plan (Stage I)	World Bank, UNIDO (lead)	65th	20% by 2017

(II) LATEST ARTICLE 7 DATA (Annex C Group I)	Year: 2014	59.72 (ODP tonnes)
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2014	
Chemical	Aerosol	Foam	Fire fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22			0.1	23.1	17.9				41.1
HCFC-141b		13.1		5.5					18.6
HCFC-142b									
HCFC-141b in imported pre-blended polyol		16.5							16.5

(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:	8.1	Remaining:	68.78

(V) BUSINESS PLAN		2015	2016	Total
World Bank	ODS phase-out (ODP tonnes)	10.5	0.8	11.3
	Funding (US \$)	1,240,539	125,840	1,366,379
UNIDO	ODS phase-out (ODP tonnes)	0.2		0.2
	Funding (US \$)	24,181		24,181

(VI) PROJECT DATA			2010*	2011	2012	2013	2014	2015**	2016	2017	Total	
Montreal Protocol consumption limits			n/a	n/a	n/a	83.0	83.0	74.7	74.7	74.7	n/a	
Maximum allowable consumption (ODP tonnes)			n/a	n/a	n/a	83.0	83.0	74.7	70.5	66.4	n/a	
Agreed funding (US \$)	World Bank	Project costs	0	1,070,100	0	842,750	311,240	0	117,060	0	2,341,150	
		Support costs	0	80,258	0	63,206	23,343	0	8,780	0	175,586	
	UNIDO	Project costs	2,167,033	70,000	0	22,184	0					2,259,217
		Support costs	162,527	6,300	0	1,997	0					170,824
Funds approved by ExCom (US \$)	Project costs		2,167,033	1,140,100	0	0	0				3,307,133	
	Support costs		162,527	86,558	0	0	0					249,085
Total funds requested for approval at this meeting (US \$)	Project costs							864,934			864,934	
	Support costs							65,203			65,203	

\*Approved at the 60<sup>th</sup> meeting for Petra Engineering Co. and herewith subsumed into this Agreement.

\*\*Second tranche planned for 2013 but submitted to the 75<sup>th</sup> meeting.

<b>Secretariat's recommendation:</b>	For individual consideration
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## PROJECT DESCRIPTION

1. On behalf of the Government of Jordan, UNIDO as the lead implementing agency, has submitted to the 75<sup>th</sup> meeting a request for funding for the second tranche<sup>1</sup> of stage I of the HCFC phase-out management plan (HPMP), at a total cost of US \$930,137, consisting of US \$22,184, plus agency support costs of US \$1,997 for UNIDO, and US \$842,750, plus agency support costs of US \$63,206 for the World Bank. The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption in 2013 and 2014 and the tranche implementation plan for 2015 to 2017.

### Report on HCFC consumption

#### *HCFC consumption*

2. The Government of Jordan reported a consumption of 59.72 ODP tonnes of HCFC, and 16.5 ODP tonnes of HCFC-141b contained in imported pre-blended polyols in 2013. The 2010-2014 HCFC consumption is shown in Table 1.

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

HCFC	2010	2011	2012	2013	2014	Baseline
<b>Metric tonnes</b>						
HCFC-22	1,095.5	1,172.0	1,222.0	760.0	747.56	985.3
HCFC-141b	316.3	335.0	524.0	160.0	169.1	261.7
<b>Sub-total (mt)</b>	<b>1,411.8</b>	<b>1,507.0</b>	<b>1,746.0</b>	<b>920.0</b>	<b>916.7</b>	<b>1,247.0</b>
HCFC-141b in imported pre-blended polyols	153.2	165.0	174.0	80.0	150.0	102.82**
<b>Total (mt)</b>	<b>1,565.0</b>	<b>1,672.0</b>	<b>1,920.0</b>	<b>1,000</b>	<b>1,066.7</b>	
<b>ODP tonnes</b>						
HCFC-22	60.3	64.46	67.21	41.80	41.12	54.2
HCFC-141b	34.8	36.85	57.64	17.60	18.60	28.8
<b>Sub-total (ODP tonnes)</b>	<b>95.0</b>	<b>101.3</b>	<b>124.85</b>	<b>59.40</b>	<b>59.72</b>	<b>83.0</b>
HCFC-141b in imported pre-blended polyols	16.9	18.2	19.1	8.8	16.5	11.31**
<b>Total (ODP tonnes)</b>	<b>111.9</b>	<b>119.5</b>	<b>143.95</b>	<b>68.2</b>	<b>76.22</b>	

\*Average consumption between 2007 and 2009

3. Since 2012 imports of HCFC-22 have decreased mainly due to the conversion of enterprises manufacturing air-conditioning units (AC) and the closure of other enterprises. The consumption of HCFC-141b in bulk substantially decreased in 2013 due to an economic slowdown in the country. The consumption of HCFC-141b contained in imported pre-blended polyols in 2014 was similar to the starting point for aggregate reduction in consumption. The total HCFC consumption in 2014 of 59.72 ODP tonnes was already 28 per cent below the HCFC baseline of 83.0 ODP tonnes.

#### *Verification report*

4. The verification report confirmed that the Government of Jordan is implementing a licensing and quota system for HCFC imports and exports. The HCFC consumption indicated in the verification report for 2014, excluding the HCFC-141b in pre-blended polyols, was 54.2 ODP tonnes, while the consumption reported under Article 7 was 59.72 ODP tonnes. The difference as explained by UNIDO may be due to an error in the recording by the verifier of level of consumption of one enterprise (the consumption reported by the verifier was 46.1 mt instead of the actual consumption of 96.1 mt). The

<sup>1</sup> The second tranche was originally planned for 2013 but only submitted to the 75<sup>th</sup> meeting.

verification concluded that the Government of Jordan has met the Montreal Protocol targets for all the relevant years of the HPMP.

*Country programme (CP) implementation report*

5. The Government of Jordan reported HCFC sector consumption data under the 2014 CP implementation report which is consistent with the data reported under Article 7.

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

*Legal framework*

6. The licensing and quota system was updated in 2013 and ensures effective control over import and export of HCFCs. The Government of Jordan is working on the relevant legislation to ban the manufacture and import of HCFC-based, residential air-conditioning (AC) equipment by 31 December 2016.

7. The following activities were carried out in 2013-2014: a number of workshops for customs officers; a workshop for policy-makers to assess the regulations; a workshop to launch the national strategy in the AC sector including the linkages to energy efficiency improvement with the participation of all manufacturers in the country, Government officials and the media.

*Manufacturing sector*

8. The conversion project at Petra Engineering Industries Company (Petra), manufacturing unitary AC equipment, has been completed with the phase-out 6.9 ODP tonnes of HCFC-22 and 1.2 ODP tonnes of HCFC-141b. The enterprise was converted to HFC-410A. The project completion report will be submitted by the end of 2015.

9. Three other eligible enterprises manufacturing unitary AC equipment were identified for the conversion from HCFC-22 to HFC-410A. Two out of the three enterprises, Abu Haltam Group for Investments (with a consumption of 1.1 ODP tonnes of HCFC-22) and National Refrigeration Company (NRC) (with a consumption of 0.33 ODP tonnes of HCFC-22) signed sub-grant agreements with the Ministry of Environment in 2014. The installation of equipment at Abu Haltam started in August 2015 and is expected to be completed by 1 January 2016. The installation of equipment at NRC is planned in November 2015 and the conversion is expected to be completed by 1 January 2016. The third and largest enterprise, Middle East Complex for Engineering, Electronics and Heavy Industries PLC (MEC) (with a consumption of 6.33 ODP tonnes and an estimated cost of US \$1,360,850) has filed for bankruptcy and closed its operations.

10. The project also involved the conversion of two ineligible enterprises of which one (with a consumption of 70 ODP tonnes in 2010) has moved production to Iraq and the other (with a consumption of 70 ODP tonnes) will convert with its own resources by 31 December 2016, once the ban on HCFC-22-based manufacturing in the AC sector is established.

*Refrigeration servicing sector*

11. As part of technical assistance to the AC servicing sector, an action plan and terms of reference for the training institution were developed. Training activities are scheduled to commence in the last quarter of 2015 and be completed by December 2016.

*Project implementation and monitoring unit (PMU)*

12. Support was provided by the PMU to the AC beneficiaries through frequent site visits, facilitation of technical exchanges and meetings with interested parties. A project implementation manual was completed by the Ministry of Environment in coordination with the World Bank in 2013.

Level of fund disbursement

13. As of September 2015, of the US \$3,433,633 so far approved, US \$2,472,003 had been disbursed (US \$2,334,403 for UNIDO and US \$137,600 for the World Bank) as shown in Table 2.

**Table 2. Financial report of stage I of the HPMP for Jordan (US \$)**

Agency	First tranche	
	Approved	Disbursed
UNIDO	70,000	40,870
World Bank	1,070,100	137,600
<b>Sub-total</b>	<b>1,140,100</b>	<b>178,470</b>
Demonstration project for the phase-out of HCFC-22 and HCFC-141b from the manufacture of unitary air-conditioning equipment at Petra Engineering Industries Co.*	2,167,033	2,167,033
Additional funds approved for the heat exchanger production and testing for Petra Engineering Industries (66 <sup>th</sup> meeting)	126,500	126,500
<b>Total</b>	<b>3,433,633</b>	<b>2,472,003</b>
<b>Disbursement rate (%)</b>		<b>72</b>

\*Approved as stand-alone project at the 60<sup>th</sup> meeting and subsequently subsumed into the HPMP.

Implementation plan for the second tranche of the HPMP

14. The second funding tranche of the HPMP will be implemented between November 2015 and December 2016. During this period, the conversion of the two enterprises, Abu Haltam and NRC, will be completed; 10 trainers and approximately 100 refrigeration technicians will be trained; curricula for good practice in servicing HCFC-22-based AC equipment and retrofitting will be developed; and 75 toolsets/composite charging stations for pilot retrofit of AC units will be provided. The PMU will continue to coordinate the activities in the country and promote the approval, application and enforcement of all regulations on HCFCs.

**SECRETARIAT'S COMMENTS AND RECOMMENDATION****COMMENTS**Progress report on the implementation of the first tranche of the HPMP*Legal framework*

15. In line with decision 63/17, confirmation has been received from the Government that an enforceable national system of licensing and quotas for HCFC imports and exports is in place and that the system is capable of ensuring compliance with the Montreal Protocol. The HCFC import quota for 2015 has been established at 74.7 ODP tonnes. For subsequent years, the annual quota will be consistent with the levels specified in the agreement and allowed under the Montreal Protocol.

*Issues with the RAC manufacturing sector*

16. In response to the query on actions taken to address the requirements in decision 65/40(d)(ii) and (iii)<sup>2</sup> UNIDO indicated that in regards to the conversion at Petra, all prototypes and their functioning were designed to be more energy efficient than with the use of HCFC-22 refrigerant. Furthermore, at the end of 2015, an international expert will work with the RAC enterprises undergoing conversion on modelling the optimization of several of their components to develop specifications for design that will lead to improved energy efficiency in accordance with the national standards.

17. UNIDO also provided an update on the following energy efficiency initiatives being implemented in the country:

- (a) UNDP Energy Efficiency Standards and Labelling project: Implementation is ongoing; through cooperation with the Jordan Standards and Metrology Organization (JSMO) and the European Union (EU) Twinning Project, standards have been drafted based on the EU electrical appliances regulations and are in the process of being approved by JSMO;
- (b) Technical regulations on energy labelling of appliances including air-conditioners: The regulations have been issued by the Government of Jordan from 2011 and have been further updated by the JSMO. A resolution to require compliance with the technical regulations was drafted in 2014. The finalization of the updated regulations is pending by JSMO;
- (c) Energy Efficiency Investment Support Framework under the World Bank through a GEF project: The project showed slow implementation and eventually was closed in June 2014; and
- (d) Testing laboratory for AC benchmarking: with U.S. Agency for International Development support, the laboratory equipment for air-conditioner testing has moved forward and Jordan's Royal Scientific Society issued a tender for the equipment.

18. The AC manufacturers in the country will be obligated to meet the technical standards. Technical assistance, prototype development, trial production and testing of units will focus on meeting at least the minimum standard. Further improvements in energy efficiency will be enabled by the testing laboratory.

Revision to the HPMP Agreement

19. At the 65<sup>th</sup> meeting, the Executive Committee approved in principle, stage I of the HPMP for Jordan for the period 2011 to 2017 to reduce HCFC consumption by 20 per cent of the baseline at the amount of US \$4,946,777, with funding tranches as shown in Table 3.

**Table 3. Funding tranches of the HPMP for Jordan (US \$)**

Description	2009	2011	2012	2013	2014	2015	2016	2017	Total
UNIDO	2,167,033	70,000	0	22,184	0	0	0	0	2,259,217
Support costs (UNIDO)	162,527	6,300	0	1,997	0	0	0	0	170,824
World Bank	0	1,070,100	0	842,750	311,240	0	117,060	0	2,341,150
Support costs (World Bank)	0	80,258	0	63,206	23,343	0	8,780	0	175,586
Total funding	2,167,033	1,140,100	0	864,934	311,240	0	117,060	0	4,600,367
Total support cost	162,527	86,558	0	65,203	23,343	0	8,780	0	346,410
Total costs	2,329,560*	1,226,658	0	930,137	334,583	0	125,840	0	4,946,777

\*Approved at the 60<sup>th</sup> meeting for Petra Engineering Co. and herewith subsumed into this Agreement.

<sup>2</sup> The Government of Jordan committed to achieve energy consumption for residential AC using HFC-410A at least equal to or lower than the HCFC-22 ACs they replaced. The country would also incorporate policy and technical approaches to improve the energy efficiency of residential AC equipment to offset the climate impact of HFC-410A.

20. Given the delays in implementation of some of the activities proposed in the first tranche, the second tranche originally due for 2013, was only submitted to the 75<sup>th</sup> meeting (2015). During implementation of the first tranche, MEC filed for bankruptcy and closed its operation. Under this circumstance, the World Bank was unable to disburse any of the US \$1,360,850 allocated for the conversion of the enterprise. Deducting this amount from the total funding of US \$2,341,150 approved in principle for the World Bank, results in a balance of US \$980,300, which is lower than the US \$1,070,100 approved in the first tranche. Therefore, the World Bank would have to return US \$89,800 plus agency support costs of US \$6,735 to the Multilateral Fund (i.e., funding tranches for 2013, 2014 and 2016 as originally proposed will not be requested).

21. In light of the bankruptcy of MEC, during the project review process, on behalf of the Government of Jordan, UNIDO suggested the following two options for consideration by the Executive Committee:

- (a) To utilize approximately US \$410,000 for the phase-out of HCFC-141b used by Fathi Abu Arja and Partner (FAA), a systems house in Jordan that supplies pre-blended polyol manufactured locally or imported to almost all enterprises in the foam sector, provides technical support to the foam enterprises (e.g., machine maintenance, formulation adjustment); and is the sole provider of PU spray foaming services for the insulation of buildings. This project was a component of the HPMP for Jordan as originally submitted, but subsequently withdrawn during the negotiations at the 65<sup>th</sup> meeting<sup>3</sup>; or
- (b) To conclude stage I of the HPMP with the second tranche (funding tranche for 2013 as originally submitted), with funding approved only for UNIDO, as no more funding is available for the World Bank. The commitment of the Government of Jordan to reduce HCFC consumption by 20 per cent of the baseline by 2017 will remain.

22. The Secretariat discussed the options with UNIDO and it was agreed to proceed with the second option, taking into account that stage I of HPMP did not include an overarching strategy for the phase-out of HCFC-141b used in the foam sector in Jordan; with the current consumption levels in the country the conversion at FAA was not needed to ensure compliance with the Montreal Protocol; original project proposal was prepared over four years ago and was likely to be outdated (as, for example, had not considered the demonstration projects focused on systems houses, spray foam conversions, and other projects in Article 5 countries that have been implemented, and new foam formulations that have become available.) The Secretariat also noted that the funding for the preparation of stage II of the HPMP has been requested in the work programmes amendments of UNIDO<sup>4</sup> and the World Bank<sup>5</sup> submitted to the 75<sup>th</sup> meeting. Provided that the Executive Committee approves the completion of stage I of the HPMP with the second tranche request and the preparatory funding for stage II of the HPMP at the 75<sup>th</sup> meeting, the lead agency could submit stage II as early as the 76<sup>th</sup> meeting.

23. To reflect the cancellation of the MEC sub-project and the return of the related funds, the relevant appendix of the Agreement between the Government of Jordan and the Executive Committee have been updated and a new paragraph 16 has been added to indicate that the updated Agreement supersedes that reached at the 65<sup>th</sup> meeting, as shown in Annex I to the present document. The full revised Agreement will be appended to the final report of the 75<sup>th</sup> meeting.

<sup>3</sup> UNEP/OzL.Pro/ExCom/65/39/Rev.1

<sup>4</sup> UNEP/OzL.Pro/ExCom/75/31.

<sup>5</sup> UNEP/OzL.Pro/ExCom/75/32.

## Conclusion

24. The Secretariat noted the progress in implementation of the first tranche of the HPMP. The conversion at Petra has been completed and the conversion at the two other eligible enterprises (i.e., NRC and Abu Haltam Group) have started or will soon commence. The ban on the manufacture and import of HCFC-based, residential AC equipment will be in place by 31 December 2016. The import licensing and quota system is operational and will enable the country achieving compliance with the Montreal Protocol's phase-out schedule for HCFCs and the targets specified in the Agreement. The verification report confirms that the country's 2014 consumption is below that specified in its Agreement with the Executive Committee. The Secretariat believes that concluding stage I of the HPMP with the approval of the second tranche as amended and allowing the submission of stage II of the HPMP as early as the 76<sup>th</sup> meeting is the most appropriate path forward.

## **RECOMMENDATION**

25. The Executive Committee may wish to consider:

- (a) Noting the progress report on the implementation of the first tranche of stage I of the HCFC phase-out management plan (HPMP) in Jordan;
- (b) Noting that the Middle East Complex for Engineering, Electronics and Heavy Industries PLC (MEC) will not participate in Jordan's HPMP:
  - (i) That the Fund Secretariat had updated Appendix 2-A of the Agreement between the Government of Jordan and the Executive Committee, based on the revised funding level, and that a new paragraph 16 had been added to indicate that the updated Agreement superseded that reached at the 65<sup>th</sup> meeting, as contained in Annex I to the present document;
  - (ii) The return by the World Bank of US \$89,800 plus agency support costs of US \$6,735 to the to the Multilateral Fund to the 75<sup>th</sup> meeting;
- (c) Requesting the Government of Jordan, UNIDO and World Bank to submit progress reports on a yearly basis on the implementation of the work programme associated with the second and final tranche until the completion of the project, verification reports until approval of stage II, and the project completion report no later than the first meeting of the Executive Committee in 2018;
- (d) That the Government of Jordan could submit a funding request for stage II of the HPMP as early as the 76<sup>th</sup> meeting; and
- (e) Approving the second and final tranche of stage I of the HPMP for Jordan, and the corresponding 2015-2017 tranche implementation plan, at the amount US \$22,184, plus agency support costs of US \$1,997 for UNIDO.



Annex I

**TEXT TO BE INCLUDED IN THE UPDATED AGREEMENT THE GOVERNMENT OF THE  
HASHEMITE KINGDOM OF JORDAN AND THE EXECUTIVE COMMITTEE OF THE  
MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF  
HYDROCHLOROFLUOROCARBONS**

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

**16. The updated Agreement supersedes the Agreement reached between the Government of the Hashemite Kingdom of Jordan and the Executive Committee at the 65<sup>th</sup> meeting of the Executive Committee.**

**APPENDIX 2-A: THE TARGETS, AND FUNDING**

Row	Particulars	2010	2011	2012	2013	2014	2015	2016	2017	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	n/a	n/a	n/a	83.0	83.0	74.7	74.7	74.7	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	n/a	n/a	n/a	83.0	83.0	74.7	70.5	66.4	n/a
2.1	Lead IA (UNIDO) agreed funding (US \$)	2,167,033	70,000	0	<b>0</b>	0	<b>22,184</b>	0	0	2,259,217
2.2	Support costs for Lead IA (US \$)	162,527	6,300	0	<b>0</b>	0	<b>1,997</b>	0	0	170,824
<b>2.3</b>	<b>Cooperating IA (World Bank) agreed funding (US \$)</b>	0	1,070,100	0	<b>0**</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,070,100</b>
<b>2.4</b>	<b>Support costs for Cooperating IA (US \$)</b>	0	79,823	0	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>79,823</b>
<b>3.1</b>	<b>Total agreed funding (US \$)</b>	2,167,033	1,140,100	0	<b>0</b>	<b>0</b>	<b>22,184</b>	<b>0</b>	<b>0</b>	<b>3,329,317</b>
<b>3.2</b>	<b>Total support cost (US \$)</b>	162,527	86,123	0	<b>0</b>	<b>0</b>	<b>1,997</b>	<b>0</b>	<b>0</b>	<b>250,647</b>
<b>3.3</b>	<b>Total agreed costs (US\$)</b>	2,329,560*	1,226,223	0	<b>0</b>	<b>0</b>	<b>24,181</b>	<b>0</b>	<b>0</b>	<b>3,579,964</b>
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)									17.44
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)									6.88*
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)									29.87
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)									0.00
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)									1.19*
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)									27.60
4.3.1	Total phase-out of HCFC-141b contained in imported pre-blended polyols agreed to be achieved under this Agreement (ODP tonnes)									0.00
4.3.2	Phase-out of HCFC-141b contained in imported pre-blended polyols to be achieved in previously approved projects (ODP tonnes)									0.00
4.3.3	Remaining eligible consumption for of HCFC-141b contained in imported pre-blended polyols (ODP tonnes)									11.31

\* Approved at the 60<sup>th</sup> meeting for Petra Engineering Co. and herewith subsumed into this Agreement.

\*\* Funds associated with Middle East Complex for Engineering, Electronics and Heavy Industries PLC, withdrawn from stage I.