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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Ninety-third Meeting  
Montreal, 15-19 December 2023  
Item 9(c) of the provisional agenda<sup>1</sup>

**PROJECT PROPOSAL: OMAN**

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

Phase-out

- HCFC phase-out management plan (stage III, second tranche) UNIDO and UNEP

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<sup>1</sup> UNEP/OzL.Pro/ExCom/93/1

**PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS**

**Oman**

(I) PROJECT TITLE	AGENCY	MEETING APPROVED	CONTROL MEASURE
HCFC phase-out plan (stage III)	UNIDO (lead), UNEP	88 <sup>th</sup>	100% phase-out by 2030

(II) LATEST ARTICLE-7 DATA (Annex C Group I)	Year: 2022	12.83 ODP tonnes
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(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP tonnes)								Year: 2022	
Chemical	Aerosol	Foam	Fire-fighting	Refrigeration		Solvent	Process agent	Lab use	Total sector consumption
				Manufacturing	Servicing				
HCFC-22					12.83				12.83
HCFC-141b									
HCFC-142b									
HCFC-141b contained in imported pre-blended polyols									

(IV) CONSUMPTION DATA (ODP tonnes)			
2009-2010 baseline:	31.5	Starting point for sustained aggregate reductions:	32.57
CONSUMPTION ELIGIBLE FOR FUNDING			
Already approved:	32.57	Remaining:	0.00

(V) ENDORSED BUSINESS PLAN		2023	2024	2025	Total
UNIDO	ODS phase-out (ODP tonnes)	1.7	0.00	0.00	1.7
	Funding (US \$)	125,291	0	0	125,291
UNEP	ODS phase-out (ODP tonnes)	1.7	0.00	0.00	1.7
	Funding (US \$)	130,612	0	0	130,612

(VI) PROJECT DATA			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Montreal Protocol consumption limits			20.46	20.46	20.46	20.46	10.23	10.23	10.23	10.23	10.23	0	n/a
Maximum allowable consumption (ODP tonnes)			16.12	16.12	16.12	16.12	10.23	10.23	10.23	10.23	10.23	0	n/a
Funding agreed in principle (US \$)	UNIDO	Project costs	340,344	0	117,094	0	141,094	0	107,094	0	0	74,846	780,472
		Support costs	23,824	0	8,197	0	9,877	0	7,496	0	0	5,239	54,633
	UNEP	Project costs	182,864	0	116,000	0	116,000	0	122,000	0	0	89,500	626,364
		Support costs	23,034	0	14,612	0	14,612	0	15,368	0	0	11,274	78,900
Funds approved by ExCom (US \$)	Project costs	523,208	0	0	0	0	0	0	0	0	0	0	523,208
	Support costs	46,858	0	0	0	0	0	0	0	0	0	0	46,858
Total funds recommended for approval at this meeting (US \$)	Project costs			233,094									233,094
	Support costs			22,809									22,809

<b>Secretariat's recommendation:</b>	Blanket approval
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## PROJECT DESCRIPTION

1. On behalf of the Government of Oman, UNIDO as the lead implementing agency has submitted a request for funding for the second tranche of stage III of the HCFC phase-out management plan (HPMP), at a total cost of US \$233,049, consisting of US \$117,094, plus agency support costs of US \$8,197, for UNIDO and US \$116,000, plus agency support costs of US \$14,612, for UNEP.<sup>2</sup> The submission includes a progress report on the implementation of the first tranche, the verification report on HCFC consumption for 2020 to 2022, and the tranche implementation plan for 2024 to 2025.

### Report on HCFC consumption

2. The Government of Oman reported a consumption of 12.83 ODP tonnes of HCFCs in 2022, which is 59 per cent below the HCFC baseline for compliance.

**Table 1. HCFC consumption in Oman (2018-2022 Article 7 data)**

HCFC	2018	2019	2020	2021	2022	Baseline
<b>Metric tonnes (mt)</b>						
HCFC-22	348.60	325.23	290.16	269.93	233.26	537.57
HCFC-123		0.73	0.00	0.00	0.00	
HCFC-141b	0.00	0.00	0.00	0.00	0.00	10.15
HCFC-142b	0.00	0.00	0.00	0.00	0.00	12.05
<b>Total HCFCs (mt)</b>	<b>348.60</b>	<b>325.96</b>	<b>290.16</b>	<b>269.93</b>	<b>233.26</b>	<b>559.77</b>
HCFC-141b in imported pre-blended polyols*	0.00	0.00	0.00	0.00	0.00	10.00**
<b>ODP tonnes</b>						
HCFC-22	19.17	17.89	15.96	14.85	12.83	29.57
HCFC-141b	0.00	0.00	0.00	0.00	0.00	1.12
HCFC-123		0.01	0.00	0.00	0.00	
HCFC-142b	0.00	0.00	0.00	0.00	0.00	0.78
<b>Total HCFCs (ODP tonnes)</b>	<b>19.17</b>	<b>17.90</b>	<b>15.96</b>	<b>14.85</b>	<b>12.83</b>	<b>31.47</b>
HCFC-141b in imported pre-blended polyols*	0.00	0.00	0.00	0.00	0.00	1.10**

\* Country programme data

\*\* Average consumption between 2007 and 2009

3. The reduction in HCFC consumption is attributed to the strict implementation of the e-licensing and quota system supported by activities implemented through the HPMP. The use of HCFC-22 and HCFC-142b to produce extruded polystyrene (XPS) foam and HCFC-141b in the polyurethane (PU) foam manufacturing sector has been fully phased out and imports of HCFC-141b contained in imported pre-blended polyols have not been permitted into the country since 2017. The consumption of HCFC-22 was also reduced through training of refrigeration technicians and technical assistance activities in the servicing sector. HCFC-22-based air-conditioning (AC) units are being replaced by R-410A-based units due to their price and higher energy efficiency.

### *Country programme implementation report*

4. The Government of Oman reported HCFC sector consumption data under the 2022 country programme (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 was implementing a licensing and quota

<sup>2</sup> As per the letter of 22 July 2023 from the Environment Authority of Oman to UNIDO.

system for HCFC imports and exports and that the total consumption of HCFCs reported under Article 7 of the Montreal Protocol for 2020 to 2022 was correct. The verification concluded that Oman has effective regulations for the operation of its quota and licencing system and has successfully implemented activities from stage III of the HPMP.

#### Status of implementation of stage II of the HCFC phase-out management plan

6. Stage II of the HPMP was completed on 31 December 2021, in line with the country's Agreement with the Executive Committee and the project completion report was submitted on 30 March 2023.

#### Progress report on the implementation of the first tranche of stage III of the HCFC phase-out management plan

##### *Legal framework*

7. The National Ozone Unit (NOU) has been re-established within the Environment Authority as a dedicated unit to implement the country's obligations under the Vienna Convention and Montreal Protocol after government restructuring early in 2023 transferring climate affairs and Montreal Protocol responsibilities to the Authority. The Environment Authority is the authority responsible for reviewing and authorizing HCFC import and export licenses and quotas. The national ozone committee (NOC) was established by administrative decision (546/2022) to support implementing the legal and technical obligation under the Montreal Protocol.

8. The HCFC import and export licensing system has been in place since 2001 and since 2016 has been implemented through the e-licensing system (BAYAN). The country has prohibited the import of HCFC-142b and HCFC-141b in bulk and contained in pre-blended polyols since 1 January 2015 and 1 January 2017, respectively. The Government also issued a decree in November 2019 banning the venting of refrigerants into the atmosphere during servicing, installation, operation and decommissioning of refrigeration and air-conditioning (RAC) equipment; establishing mandatory refrigerant recovery and recycling and quarterly reporting on recovered and reused refrigerants and on stock of unusable refrigerants; mandatory leak detection of all controlled substances in RAC systems with a charge greater than 3 kg; and requiring the licensing of all entities (i.e., importers, distributors, retailers, and service workshops) handling ODS in the RAC sector.

9. The ban on the use and import of refrigerants in disposable cylinders, that was expected to be issued by 1 January 2020, has not yet been implemented due to challenges associated with the ban's viability and the supporting institutional capacity for implementation; this is expected to be considered as part of stage III. The country is implementing the enabling activities for HFC phase-down that are expected to lead to the ratification of the Kigali Amendment.

10. During the implementation of the first tranche of stage III of the HPMP, the e-licensing system was updated to include new customs codes and generate reports in different formats; meetings were held with relevant Government institutions to discuss the ratification of the Kigali Amendment, the licensing system for RAC technicians, and the draft update of the safety standards and specifications for hydrocarbon (HC). An agreement was reached with the Ministry of Labour to link the issuance of the card of practice for RAC technicians to a certificate of professional competence. The planned training for custom and enforcement officers was delayed due to the move of the NOU back to the Environment Authority and the six refrigerant identifiers for customs officers and environmental inspectors were procured in March 2023. The NOU has been considering gender in all policies, principles and activities.

*Refrigeration servicing sector*

11. During the implementation of the first tranche of stage III of the HPMP two meetings were held with representatives from the largest RAC company to discuss how to assist with the HCFC phase-out and ensure compliance. A workshop was held for 50 end-users and other national stakeholders to promote good practices to minimize leakage and raise awareness on alternative RAC technologies and on the development of national standards. The NOU has initiated work to identify two recycling, recovery, and reclamation (RRR) facilities which, once identified, will be provided with equipment; RRR guidelines for refrigerants to be used by the centres are being developed, this is expected to be completed during the last quarter of 2023.

12. An agreement has been reached with the Omani Society for Petroleum Services (OPAL) to deliver the planned activities in the servicing sector including training and certification of RAC technicians. OPAL, with the assistance of UNEP and in close coordination with the NOU, the Technical and Vocational Training Corporation (TVTC) and the RAC industry, has started the update of the training curricula and finalized the training programme to support the certification scheme. A number of coordination meetings were held to discuss the steps for the implementation of the certification system. Work has been initiated to develop guidelines for the use and installation of HC-based equipment specifically addressing Oman's high-ambient temperature conditions.

13. Five new training institutes to support the technician training programme have been identified and provided with equipment; training through these institutes is expected to commence in December 2023. The certification programme for technicians has been initiated through training of qualified technicians through the vocational training colleges; 700 technicians are expected to be certified as part of stage III.

14. An awareness workshop was held for key stakeholders focusing on emerging technologies for the RAC sector; gender mainstreaming considerations and other general information related to the Montreal Protocol and the Kigali Amendment; other activities included the distribution of brochures, publication of NOU activities in a local newspaper; educational lectures; social media posts; radio interviews; field visits to RAC workshops; and the celebration of World Ozone Day. A targeted workshop was also held for 55 end-users in the fisheries and AC sectors, on leak minimization.

*Project implementation and monitoring*

15. The activities of the PMU have been supported by the recruitment of a national project coordinator. Of the US \$28,094 allocated for the PMU, US \$26,694 has been disbursed for operations and staff.

Level of fund disbursement

16. As of September 2023, of the US \$523,208 approved so far (US \$340,344 for UNIDO and US \$182,864 for UNEP), US \$228,120 (44 per cent) had been disbursed (US \$158,120 for UNIDO and US \$70,000 for UNEP). The balance of US \$295,088 will be disbursed in 2023 and 2024.

Implementation plan for the second tranche of stage III of the HCFC phase-out management plan

17. The following activities will be implemented between January 2024 and December 2025:
- (a) *Strengthening institutional capacity, regulation and awareness:* regular meetings of the NOC to supervise the ongoing update of ODS regulations, national standards on use of alternative refrigerants, and consultation workshops for the certification scheme; three training workshops for 60 customs and enforcement officers (one on updates to the e-licencing system and two to continue to build capacity); one awareness raising workshop for the RAC sector on feasible long term HCFC alternatives and requirements under the

applicable ODS regulations; and one study on energy efficiency and the economic benefits of the minimum-leakage initiative (UNEP) (US \$30,000 and US \$13,000 from the previous tranche); awareness campaign to promote the RRR network to key stakeholders and end users; delivery of the refrigerant identifiers for customs and environment inspectors (UNIDO) (US \$6,000);

- (b) *Assistance for service technicians and end users for minimum-leakage*: finalize updates to the training curricula for vocational training institutes; train 200 RAC technicians on good servicing practices; implement the certification programme and initial training and certification of 315 technicians (UNEP) (US \$86,000 and US \$93,500 from the previous tranche); finalise the updated safety standards and specifications for HC; complete the training on the use of the equipment provided for the five training centres; procure leak detection devices for certified technicians; organize one workshop on emerging technologies for 50 end users promoting minimum-leakage (UNIDO) (US \$59,000 and US \$98,824 from the previous tranche);
- (c) *Recovery, recycling, and reclamation network*: strengthen the RRR capacity through the provision of equipment<sup>3</sup> to one recovery centre (UNIDO) (US \$82,000 from the previous tranche);
- (d) *Gender mainstreaming*: continue to promote and monitor gender mainstreaming policies and report on related indicators (UNEP) (US \$6,364 from the previous tranche); and
- (e) *Project monitoring unit* (UNIDO) (US \$52,094 and US \$ 1,400 from the previous tranche): operation of the project management unit, monitoring, and verification of HCFC consumption; including US \$49,494 for national and international experts and US \$4,000 for travel.

## SECRETARIAT'S COMMENTS AND RECOMMENDATION

### COMMENTS

#### Progress report on the implementation of the second tranche of stage III of the HCFC phase-out management plan

##### *Legal framework*

18. The Government of Oman has already issued HCFC import quotas for 2023 at 12.54 ODP tonnes, which is lower than the Montreal Protocol control targets and the maximum allowable consumption for the year.

##### *Refrigeration servicing sector*

19. UNIDO explained that the customs training planned for the period was delayed because of issues related to the late delivery of equipment (i.e., refrigerant identifiers, etc.) and due to the relocation of the NOU back to the Environment Authority. The same reasons were reported for the delay in planned trainings for service technicians. In response to a query on the impact of this relocation on the implementation of activities for the HPMP, UNIDO explained that initial challenges related to this transfer have now been resolved and that the Government is committed to ensuring that activities will be implemented without further interruptions.

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<sup>3</sup> Including reclamation unit, refrigerant identifiers, recovery cylinders, manifold gauges and hoses, and brazing kits

20. In providing further information on activities related to the promotion of the RRR network, UNIDO said that several meetings were held with the main importers of refrigerants and RAC industry to discuss all aspects related to establishing and operating of the RRR network including site visits to potential host enterprises for the planned centers. UNIDO also reported that from the time of submission, four potential host enterprises had been identified by the national expert and one will be provided with equipment under stage III.

21. With regard to the development of national specifications and codes for labeling requirements for equipment and installations operating with HC and ammonia refrigerants, UNIDO explained that this activity is ongoing, consultation meetings have been held with relevant stakeholders. The main outcome would be to have guidelines for end users on the use of HCs, particularly from a safety perspective, since currently no such guidelines on their use exist in the country.

#### Gender policy implementation

22. In line with decisions 84/92(d) and 90/48(c), inputs were sought on how to integrate gender specific indicators in planning and implementation of the HPMP; gender disaggregated data was collected, and the project encourages gender balanced participation in HPMP related activities; training activities will include a section on gender mainstreaming. UNIDO indicated that instead of a separate workshop as planned for the first tranche, a presentation on gender mainstreaming considerations was made at an awareness-raising workshop on alternative technologies held in October 2022; this included the discussion of mechanisms for empowering women in the labour market mainly in the air-conditioning and refrigeration sector, and the problems that may be facing women in this sector, and identifying actions that can be implemented as part of the HPMP. Consultations with the gender expert and stakeholders throughout project implementation will continue to identify specific indicators to measure the success of these interventions.

#### Sustainability of the HCFC phase-out and assessment of risks

23. Oman continued developing and strengthening its legal framework to create an enabling environment for sustainable phase-out, including an e-licencing system; a ban on imports of HCFC-141b in bulk and contained in pre-blended polyols, and HCFC-142b; a ban on the venting of refrigerants into the atmosphere; mandatory refrigerant recovery and recycling and quarterly reporting thereon; mandatory leak detection of all controlled substances in RAC systems with a charge greater than 3 kg and logging of leaks and repairs; and the requirement of a license for all entities handling ODS. The training of technicians, and planned implementation of the certification scheme, as well as the strengthening of the reclamation network, will further enhance the sustainability of the phase-out. In assessing the risks during implementation, UNIDO indicated that the delays caused by equipment delivery impacted some of the project activities, and emphasized that as agreed with the Government, equipment specifications will be done in advance to reduce delays in procurement and facilitate a timely and efficient implementation of the activities during the second tranche.

#### Conclusion

24. The verification report confirmed that the Government is enforcing a licensing and quota system for the import and export of HCFCs, and consumption in 2022 is 59 per cent below the HCFC baseline for compliance and 20 per cent below the control target stipulated in the Agreement with the Executive Committee. The disbursement of the first tranche of stage III is 44 per cent. While there have been some delays in implementation, in part due to the relocation of the NOU back to the Environment Authority, the HPMP is progressing, and the implementation of the planned activities for the second tranche will ensure that the country meets its targets under the Montreal Protocol and its Agreement with the Executive Committee.

**RECOMMENDATION**

25. The Fund Secretariat recommends that the Executive Committee note the progress report on the implementation of the first tranche of stage III of the HCFC phase-out management plan (HPMP) for Oman, and further recommends blanket approval of the second tranche of stage III of the HPMP and the corresponding 2024-2025 tranche implementation plan for Oman at the funding levels shown in the table below.

	<b>Project title</b>	<b>Project funding (US \$)</b>	<b>Support costs (US \$)</b>	<b>Implementing agency</b>
(a)	HCFC phase-out management plan (stage III, second tranche)	117,094	8,197	UNIDO
(b)	HCFC phase-out management plan (stage III, second tranche)	116,000	14,612	UNEP