



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/86/21
30 October 2020

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Eighty-sixth Meeting
Montreal, 2-6 November 2020
Postponed to 8-12 March 2021¹

REPORTS ON PROJECTS WITH SPECIFIC REPORTING REQUIREMENTS

1. The present document represents a follow-up to the issues raised in projects and activities for which specific reports were requested in previous meetings.

2. Due to the coronavirus disease (COVID-19), the 85th meeting was postponed, and the Executive Committee agreed to establish an intersessional approval process (IAP) to consider certain reports and projects. The Executive Committee further agreed that the 86th meeting would address the remaining agenda items from the 85th meeting noting that documents for the 85th meeting related to recurring agenda items, including reports on projects with specific reporting requirements could be submitted to the 86th meeting. Therefore, the present document includes reports on projects with specific reporting requirements that were submitted for individual consideration to the 85th meeting.

3. The document consists of the following three sections:

Section I: Reports on projects with specific reporting requirements for which there are no outstanding policy, cost or other issues, for which the Executive Committee may wish to take decision on the basis of the Secretariat's recommendations without further discussion ("blanket approval"). The report of the meeting of the Executive Committee will present each report contained in this section individually, together with the decision adopted by the Committee

Section II: Reports on projects with specific reporting requirements for individual consideration by the Executive Committee

Addendum I: Consists of reports related to China²

¹ Due to coronavirus disease (COVID-19)

² UNEP/OzL.Pro/ExCom/86/21/Add.1

4. Table 1 lists the reports on projects with specific reporting requirements submitted to the 86th meeting recommended for blanket approval.

Table 1: Reports on projects with specific reporting requirements recommended for blanket approval

Country	Project title	Paragraphs
ODS waste disposal projects		
Brazil	Pilot demonstration project on ODS waste management and disposal: Annual progress report	6-11
Cuba	Pilot demonstration project on ODS waste management and disposal: Update on amounts of ODS wastes destroyed	12-17
Lebanon	Pilot demonstration project on ODS waste management and disposal: Final report	18-30 Report annexed
Reports related to HCFC phase-out management plans (HPMPs)		
Argentina	HPMP (stage I): Annual progress report	31-44
Argentina	HPMP (stage II): Update on the financial viability of the enterprise Celpack	45-49
Cote d'Ivoire	HPMP (stage I): Report on implementation of verification recommendation	50-55
Egypt	HPMP (stage I): Annual progress report including progress report on EGYPRA	56-66
Ghana	HPMP (stage I): Annual progress report	67-78
Jordan	HPMP (stage II): Annual progress report	79-94
Libya	HPMP (stage I): Annual progress report	95-109
Malaysia	HPMP (stage II): Change in technology at 11 enterprises	110-119
Maldives	HPMP (stage I): Annual progress report	120-129
Morocco	HPMP (stage I): Verification report	130-135
Tunisia	HPMP (stage I): Progress report	136-144
Methyl bromide		
Argentina	Methyl bromide phase-out plan	145-147
Request for extension of enabling activities		148-150

5. Table 2 lists the report on one project with specific reporting requirements submitted to the 86th meeting for individual consideration and a brief explanation of related issues.

Table 2: Reports on projects with specific reporting requirements for individual consideration

Country	Project title	Issue	Paragraphs
Reports related to HPMPs			
Democratic People's Republic of Korea*	HPMP (stage I): Progress report on implementation of activities	Request for guidance in view of the challenges in implementing activities in light of the United Nations Security Council resolutions	151-161

*Submitted to the 85th meeting and reproduced in this document

SECTION I: REPORTS ON PROJECTS WITH SPECIFIC REPORTING REQUIREMENTS RECOMMENDED FOR BLANKET APPROVAL

ODS waste disposal projects

Brazil: Pilot demonstration project on ODS waste management and disposal (progress report) (UNDP)

Background

6. UNDP, as designated implementing agency, submitted the progress report on the implementation of the pilot demonstration project on ODS waste management and disposal in Brazil, in line with decision 79/18(c)(iii).³

Progress report

7. At the 84th meeting, UNDP reported that the incineration facility (Essencis), finalized the process adjustments for the ODS incineration, performed pre-burn tests (September 2019) and completed the official burn test (October 2019), which were supervised by CETESB.⁴ With positive results gathered from this testing, in June 2020, the facility received final authorization from CETESB for destruction of ODS.

8. UNDP reported that Essencis incinerated 3,386 kg of ODS wastes from Ecosuporte, one of the reclaim centres. Additional waste was scheduled to be sent for destruction; however, delays occurred due to the constraints imposed by the COVID-19 pandemic. The operation has now resumed and the transfer of these wastes restarted. In addition, 979 kg of ODS wastes stored in Frigelar, another reclaim centre, has also been sent, and incineration of these wastes are in the pipeline; CRN,⁵ another reclaim centre located 2,700 km from Essencis, has started the necessary measures to transport the wastes stored in their facility, and this is expected to be completed by the end of October 2020.

9. The costs for incinerating the ODS wastes from these reclaim facilities will be borne by Essencis until December 2022, as their counterpart contribution to the project; the memorandum of understanding (MOU) between Essencis and UNDP is currently under finalization. The MOU with the reclaim centres had been signed and UNDP monitors the quarterly reports prepared by these centres containing information on purity analysis tests of the ODS wastes carried out, and licenses related to the laboratories activities. The installation of the gas chromatography equipment which is part of the project at CRN was also delayed because of the pandemic and measures are being taken to revise the delivery schedule. It is noted that this delay will not impact on the continued transfer of wastes from the reclaim centre to the incineration facility.

Secretariat's comments

10. The Secretariat noted that the pilot demonstration project is progressing. Upon a request for clarification, UNDP explained that the destruction facility has been fully operational from June 2020 and the reclaim centres have continued to send wastes to the facility, supporting the proposed business model for the sustainable management of ODS wastes in Brazil. A full report containing an assessment of the ODS waste management and disposal would be provided at the completion of the project.

Recommendation

11. The Executive Committee may wish to note the progress report on the pilot demonstration project on ODS waste management and disposal in Brazil, submitted by UNDP, contained in document UNEP/OzL.Pro/ExCom/86/21.

³ To request UNDP to submit annual progress reports for the pilot ODS disposal projects in Brazil and Colombia as “projects with specific reporting requirements” until the projects had been completed.

⁴ Companhia Ambiental do Estado de São Paulo, an environmental institution that monitors and grants licenses in the state to projects, considered potentially polluting activities; this is the national ozone unit of Brazil.

⁵ Centro de Regeneração e Reciclagem do Nordeste

Cuba: Pilot demonstration project on ODS waste management and disposal (update on amounts of ODS wastes destroyed) (UNDP)**Background**

12. As its 83rd meeting, the Executive Committee considered the final report of the pilot demonstration project on ODS waste management and disposal in Cuba⁶ and *inter alia* requested UNDP to provide, at the 86th meeting, an update regarding any additional amounts of ODS waste destroyed as a result of the pilot demonstration project on ODS waste management and disposal in Cuba (decision 83/11(c)).

13. In line with decision 83/11(c), UNDP has submitted the requested information as summarized below.

Update on amounts of ODS wastes destroyed

14. The unwanted ODS collected in Cuba were destroyed in a cement kiln. During the last few years, the cement kiln had several technical failures which halted cement production and the destruction of ODS wastes. Economic restrictions to trade with Cuba limited the possibility of acquiring the spare parts required to resume full operation of the cement kiln. In addition to the technical problems, the continued drought in the country also affected the operation of the cement kiln as it is based on the wet process⁷.

15. After a 2-year break, the cement plant re-started operations in 2020; however, constraints imposed by the COVID-19 pandemic, limited production of cement and the consequent amount of ODS wastes destroyed. The total annual amount of ODS wastes destroyed is shown in Table 3.

Table 3. ODS destroyed (kilogrammes)

Year	CFC-11	CFC-12	HCFC-22	Total
2015	0	308	215	523
2016	268	259	0	527
2017	0	0	0	0
2018	0	695	0	695
2019 *	0	0	0	0
2020 *	0	126	0	126
Total	268	1,388	215	1,871

*Updated amounts of ODS waste destroyed as per decision 83/11(c).

Secretariat's comments

16. Upon request for clarification, UNDP explained that the cement plant is currently not in a position to do systematic testing and monitoring of the emissions during the cement kiln's operations as the costs are prohibitive. Further, the plant also faces challenges with getting support from recognized laboratories to analyze their samples. UNDP confirmed that the cement kiln will continue to destroy ODS, when available, as part of its regular operations once the situation normalizes.

⁶ UNEP/OzL.Pro/ExCom/83/11

⁷ The original rotary cement kilns are called "wet process" kilns. The raw meal was supplied at ambient temperature in the form of a slurry. A wet process kiln may be up to 200 m long and 6 m in diameter, to allow the excess water to be evaporated.

Recommendation

17. The Executive Committee may wish to note the update provided by UNDP on the amounts of ODS wastes destroyed by the pilot demonstration project on ODS waste management and disposal in Cuba, contained in document UNEP/OzL.Pro/ExCom/86/21.

Lebanon: Pilot demonstration project on ODS waste management and disposal (final report) (UNIDO)

Background

18. The Executive Committee approved the pilot demonstration project on ODS waste management and disposal for Lebanon at the 73rd meeting⁸ at the funding level of US \$123,475, plus agency support costs for UNIDO. This project was expected to be completed in December 2016. At the 82nd meeting,⁹ the Executive Committee approved the extension of this project to June 2019 on the understanding that the final report would be submitted no later than the 84th meeting, and that balances will be returned in line with decision 28/7 (decision 82/15(c)).

19. On behalf of the Government of Lebanon, UNIDO submitted the final report for the pilot demonstration project on ODS waste management and disposal to the 85th meeting; however, due to the late receipt of the document, the Secretariat was unable to review the submission. Accordingly, the Executive Committee, through its intersessional approval process for the 85th meeting, took note of the submission by UNIDO, and that it would be reviewed by the Secretariat and presented at the 86th meeting. The final report is annexed to the present document.

20. The project proposed to address 12.7 mt of ODS waste for destruction, strengthen the enforcement of existing legislation related to ODS waste collection and disposal; create an adequate enabling environment to enforce mandatory collection and destruction of ODS wastes; encourage stakeholder engagement to ensure a cooperative environment in setting up ODS disposal infrastructure in the country; and encourage a sustainable collection of old ODS waste for destruction through the project. It also proposed to develop a separate strategy for the disposal of 1.8 mt of halon which had been collected during the project preparation.

21. The following activities were implemented:

- (a) *Aggregation of the ODS at the national level:* RAC service companies were contacted to collect information on inventories of ODS waste; chemical analysis of the waste mixtures was completed through a certified laboratory. Of the total 41.37 mt of ODS waste identified, 3.23 mt were collected (i.e., 0.73 mt of CFC-11 and CFC-12, and 2.50 mt of halon-1211);
- (b) *Transportation of ODS waste:* An interim storage facility was identified at the outskirts of Beirut; a national consultant coordinated the transport of collected stocks to this aggregation point; cylinders were inspected, weighted, recorded and stored while preparing for export;
- (c) *Development of strategy for ODS export and destruction:* The national ozone unit issued a call for tenders for potential destruction facilities, three offers were received and evaluated in 2018, but the costs quoted from all three tenders were higher than the remaining funds

⁸ UNEP/OzL.Pro/ExCom/73/42

⁹ At the same meeting, the Executive Committee considered the synthesis report on the pilot ODS disposal projects (UNEP/OzL.Pro/ExCom/82/21).

in the project; UNIDO engaged an international company (A-Gas in the Americas¹⁰), which offered to destroy the CFC-12 and recycle the halon-1211, and processed for export and import permits including non-objection notices for the destruction of CFC-11 and CFC-12 and recycling of halon-1211; however, the implementation was delayed due to the political situation in the country and activities were halted, and

- (d) *Awareness raising, training and project monitoring*: Two national workshops were held: one on the aggregation of ODS stocks for destruction and improvements (March 2015), and the second was a training workshop on ODS waste management (December 2015), resulting in 42 participants with increased capacity and understanding of ODS waste aggregation, data survey, laboratory analysis, transportation, verification, monitoring and destruction.

22. The challenges and lessons learned from the pilot demonstration project are summarized below:

- (a) The amount of waste in the original proposal was not comparable to the actual quantities that were collected; several enterprises did not have the knowledge to manage these wastes, and therefore vented them into to the atmosphere or stored them in less than ideal situations causing cylinders to be damaged;
- (b) The high costs of shipping and destruction/recycling do not make export for destruction a sustainable activity; options for having a local facility should be explored if there is enough waste stream for this to be profitable; and
- (c) The possibility of working with neighboring countries to aggregate waste and other more cost-effective export for destruction options should be explored.

23. Of the total US \$123,475 approved, US \$115,799 was disbursed, with the balance of US \$7,676 to be returned to the Multilateral Fund.

Secretariat's comments

24. The Secretariat noted that the report did not contain any information on the institutional elements that were included in the original project approved at the 73rd meeting, namely, whether existing legislation related to ODS waste collection and disposal was strengthened, whether stakeholders have agreed on a way forward to set up an ODS disposal infrastructure in the country, and whether based on the activities implemented in the pilot project, steps had been made to encourage the environmentally-sound collection of ODS waste in the country. The Secretariat also sought clarification on the final strategy decided by the Government of Lebanon and how that would be sustainable in the future. UNIDO was also requested to provide a more detailed financial report consistent with the items approved for the project at the 73rd meeting.

25. In response, UNIDO explained that the waste collection system falls under the general Law on Environmental Protection (Law 444 of 2002). To date, the specific component of the law which relates to solid waste management systems has not been completely enforced; the results of the pilot project was expected to support formalizing the system for ODS waste collection within this legislation, but was unable to do so as political events in the country and the high cost of transporting the waste ODS impeded the full implementation of the project. UNIDO also mentioned that the two national consultation workshops completed as part of the project increased the awareness of stakeholders and encouraged them to initiate

¹⁰ United States-based company, leader in the supply and lifecycle management of refrigerants and associated products and services; their services include destruction of waste gases collected from end-of-life equipment.

talks on the possibility of setting up ODS disposal infrastructure in the country. However, the small waste streams that can be generated without a formal collection system discourages moving this idea forward.

26. In explaining the large discrepancy between the planned ODS waste for disposal (12.7 mt of CFCs) and the final collected CFC waste (less than 1 mt), UNIDO mentioned that during project implementation, halon-1211 was the predominant substance that had been collected. Since the proposal had indicated that this will be managed for recycling rather than destruction, the facility (i.e., A-Gas in the Americas) was selected because it would recycle the halon for critical use, and in doing so cover the cost associated with the destruction of the less than 1 mt of CFCs. However, the cost for transporting these substances to the facility far exceeded the remaining funding; therefore, this was not continued. UNIDO explained that these gases remain in storage in Lebanon, and the project cannot be completed.

27. With regard to the strategy for ODS disposal, UNIDO explained that the activities set out in the project (i.e., aggregation, transport, and storage of the ODS waste) were completed except for the export for destruction which could not be concluded because of the lack of funds remaining for the project. As a result, the Government of Lebanon has had the experience of setting up a system which would present a useful example should they be ready to develop this strategy in future.

28. The financial report provided by UNIDO for the project showed that a large portion of the project costs related to transportation of the ODS waste from different centres to the aggregation point (US \$22,500); capacity building which included the national workshops, policy support and project monitoring (US \$68,982); local travel (US \$12,508); and purchase of equipment such as ISO tanks (US \$3,795) and miscellaneous expenses (US \$8,014). The expenditure for the project amounted to US \$115,799.

29. This pilot demonstration project was originally approved at cost-effectiveness of US \$9.69/kg to destroy 12.75 mt of ODS wastes. Based on the financial report, the project had disbursed US \$115,799 leaving a balance of US \$7,676 to be returned to the 86th meeting. Considering that the project managed to collect, but not destroy only around 1 mt of waste CFCs, the overall cost-effectiveness of the project may be calculated as US \$123.48/kg.

Recommendation

30. The Executive Committee may wish:

- (a) To note the final report on the pilot demonstration project on ODS waste management and disposal for Lebanon, submitted by UNIDO, contained in document UNEP/OzL.Pro/ExCom/86/21; and
- (b) To invite bilateral and implementing agencies to take into account the report referred to in sub-paragraph (a), above, when assisting Article 5 countries in preparing similar projects in future.

Reports related to HPMPs¹¹

Argentina: HCFC phase-out management plan (stage I – annual progress report) (UNIDO and UNDP)

¹¹ Reports related to HPMPs of those countries, including those that have issues related to temporary use of a high-GWP technology in approved projects, that have submitted a project proposal to this meeting are included in related project proposal documents (Brazil (UNEP/OzL.Pro/ExCom/86/41), Cuba (UNEP/OzL.Pro/ExCom/86/45), India (UNEP/OzL.Pro/ExCom/86/54), Lebanon (UNEP/OzL.Pro/ExCom/86/59), Qatar (UNEP/OzL.Pro/ExCom/86/70) and Trinidad and Tobago (UNEP/OzL.Pro/ExCom/86/77)).

31. On behalf of the Government of Argentina, UNIDO as the lead implementing agency has submitted the annual progress report on the implementation of the work programme associated with stage I of the HPMP in line with decision 84/64(b) and (c).¹²

HCFC consumption

32. The Government of Argentina reported a consumption of 150.73 ODP tonnes of HCFC in 2019, which is 54 per cent below the target of 330.58 ODP tonnes for the same year set in its Agreement with the Executive Committee, and 62 per cent below the HCFC baseline for compliance of 400.70 ODP tonnes. The Government also reported HCFC sector consumption data under the 2019 country programme implementation report that is consistent with the data reported under Article 7 of the Protocol.

Legal framework

33. The Government of Argentina continues to operate its online ODS import-export licensing and quota system and to maintain close cooperation among the Ozone Programme Office (OPROZ) of the Secretariat of Environment and Sustainable Development and the customs officers in charge of the control of ODS import and export.

34. Regulations promulgated and enforced during stage I of the HPMP include a ban on the import and production of room air-conditioning (AC) equipment using HCFC-22 by 1 January 2013 and incorporation of information on imports of room AC units in the ODS licensing system. The Government of Argentina ratified the Kigali Amendment to the Montreal Protocol on 22 November 2019.

Manufacturing sector

35. *Conversion of HCFC-22 in room AC equipment (53.5 ODP tonnes):* The project was operationally completed with seven out of nine enterprises converting to R-410A, and two ceasing production of HCFC-22-based equipment due to economic difficulties.¹³

36. *Conversion from HCFC-141b in the manufacture of polyurethane (PU) rigid insulation foam for domestic refrigerators at MABE (18.46 ODP tonnes):* The project was operationally completed in April 2015.

Refrigeration servicing sector

37. A total of 28 trainers and 850 refrigeration technicians received training on good servicing practices in refrigeration and alternatives to HCFCs, and 1,184 technicians received training on specific related topics (e.g., refrigeration systems in supermarkets and handling of hydrocarbons (HCs) and other alternative refrigerants). Twelve training kits were distributed to training centres and 710 tool kits (comprising vacuum pumps, leak detectors, R-410A manifold and hoses and manual tools) were distributed to refrigeration workshops.

38. Stage I of the HPMP was extended to 31 December 2020 to allow completion of the activities to support the phase-out of HCFC-141b used as flushing agent by refrigeration servicing technicians, delayed due to issues with the equipment supplier. In 2019, the tendering process was reinitiated, a new equipment supplier was selected, and the flushing equipment was procured and delivered to Argentina. In

¹² Decision 84/64(b): To approve the extension of stage I of the HPMP to 31 December 2020 on the understanding that no further extensions would be approved; (c) To request UNIDO and the Government of Argentina to submit progress reports on the implementation of the work programme associated with stage I of the HPMP, on a yearly basis until the completion of the project, and the project completion report to the 87th meeting.

¹³ A balance of US \$500,636, including agency support costs, associated with these two enterprises was returned at the 79th meeting.

February 2020, the supplier provided training on the use of the flushing units and distributed the equipment to the beneficiaries. The equipment is being tested in the participating enterprises but the findings have not yet been compiled. The results of this demonstration project were expected by the end of 2020; however, due to the stringent measures imposed by the Government in response to the COVID-19 pandemic, there has been a slowdown in industrial activity.

Monitoring of HCFC-22 production

39. Monitoring of HCFC-22 production has been carried out through quarterly control visits and the production of reports since 2016. This activity was completed under stage I and will continue under stage II.

Project implementation and monitoring unit (PMU)

40. Regular public awareness activities were designed and implemented to promote long-term learning and knowledge sharing (i.e., 11 brochures were developed and distributed to refrigeration technicians, covering such topics as good practices in refrigeration; Montreal Protocol control measures; recovery, recycling and reclamation; safe servicing of HC-based equipment; alternatives to HCFCs; and commercial refrigeration in supermarkets).

Status of disbursement

41. As of September 2020, the entire US \$11,074,518¹⁴ approved under stage I of the HPMP had been disbursed.

Secretariat's comments

42. The Secretariat enquired whether stage I of the HPMP could be completed by 31 December 2020, given the delay caused by COVID-19. UNIDO reported that the Government was still awaiting the results of the testing of the flushing units at participating enterprises to determine their economic viability, and for this the Government would require a seven-month extension to 31 July 2021. The Government of Argentina also reiterated that it would comply with its commitment to issue a ban on the import and use of HCFC-141b for flushing refrigeration circuits during servicing no later than 1 January 2022, in line with decision 79/33(b)(iii).

43. Upon review of the information provided, notwithstanding that the extension of stage I was approved on the understanding that no further extension would be approved, the Executive Committee may wish to consider on an exceptional basis, a further extension to 31 July 2021, noting the extraordinary circumstances of the COVID-19 pandemic that caused the delay in the finalization of the project, that there is only one pending activity to be completed, that the ban on the import and use of HCFC-141b for flushing refrigeration circuits will be issued no later than 1 January 2022, and that the approved funding has already been fully utilized.

Recommendation

44. The Executive Committee may wish:

- (a) To note the annual progress report on the implementation of stage I of the HCFC phase-out management plan (HPMP) for Argentina submitted by UNIDO, contained in

¹⁴ Including the balance of US \$800,000 from the national phase-out plan relocated for activities in the servicing sector as per decision 66/42(h) and the room AC investment project approved at the 61st meeting and subsumed in the HPMP (US \$8,234,906 composed of US \$8,735,542 approved minus a balance of US \$500,636 returned to the 79th meeting (decision 77/17)).

document UNEP/OzL.Pro/ExCom/86/21; and

- (b) To approve, on an exceptional basis, the extension of stage I of the HPMP to 31 July 2021, due to the constraints imposed by the COVID-19 pandemic that delayed the completion of the activities to support the phase-out of HCFC-141b used as flushing agent by refrigeration servicing technicians, on the understanding that no further extensions would be approved.

Argentina: HCFC phase-out management plan (stage II – update on the financial viability of the enterprise Celpack) (UNIDO)

Background

45. At its 84th meeting, the Executive Committee considered the request for funding the second tranche of stage II of the HPMP for Argentina.¹⁵ The tranche request included a progress report indicating *inter alia* that the conversion of the extruded polystyrene foam enterprise Celpack, from HCFC-22 to CO₂, had been delayed due to economic difficulties that the enterprise was facing and to its interest in evaluating butane as an alternative to HCFCs. In approving the funding tranche, the Committee requested UNIDO to submit at the 85th meeting an update on the financial viability of the enterprise and whether it would be assisted by the Multilateral Fund, on the understanding that the funds from the conversion would be returned in the event that the enterprise were removed from the project (decision 84/64(d)(ii)).

46. In line with decision 84/64(d)(ii), UNIDO submitted to the 85th meeting a report indicating that the Government of Argentina and UNIDO were unable to conclude the assessment regarding the financial viability of Celpack owing to the isolation measures established by the Government due to the COVID-19 pandemic, which did not allow the national ozone unit (NOU) to visit the enterprise and to finalize the financial assessment. Accordingly, the Executive Committee, through the intersessional approval process (IAP) for the 85th meeting, requested the Government of Argentina, through UNIDO, to provide to the 86th meeting the update on the financial viability of the enterprise Celpack, a decision on whether the enterprise would be assisted by the Multilateral Fund in line with decision 84/64(d)(ii), and the return of funds associated with the conversion in the event that the enterprise were removed from the project.

Progress report

47. In response to the decision adopted through the IAP, UNIDO submitted a report indicating that, as of September 2020, no progress had been made in the proceedings due to the judicial recess implemented as part of the isolation measures due to the COVID-19 pandemic. The latest information received from the trustee revealed that the majority of Celpack's debt is with the Federal Agency for Public Incomes. As a result of the COVID-19 economic impact, the Parliament has passed a law approving a moratorium plan for financing debts due until 31 July 2020. It is likely that Celpack will be able to benefit from this policy, which includes debt reduction and a low interest rate. As soon as the Provincial Judiciary has resumed its activities, the NOU will discuss with the trustee the result of Celpack's proceedings and the creditors' voting process needed to approve the restructuring plan.

48. The Government of Argentina has reiterated that the funding associated with Celpack would not be disbursed until the issue had been resolved and its resolution considered by the Executive Committee.

¹⁵ UNEP/OzL.Pro/ExCom/84/39

Recommendation

49. The Executive Committee may wish to request the Government of Argentina, through UNIDO, to provide to the 87th meeting the update on the financial viability of the enterprise Celpack and a decision on whether the enterprise would be assisted by the Multilateral Fund under stage II of the HPMP for Argentina, in line with decision 84/64(d)(ii), and to return the funds associated with the conversion to the 87th meeting in the event that the enterprise was removed from the project.

Côte d'Ivoire: HCFC phase-out management plan (stage I – report on the adoption of the inter-ministerial decree for regulating import, export, transit, re-export and trade of ODS, and other measures on strengthening monitoring and reporting systems relating to HCFC import and export) (UNEP)

Background

50. At its 84th meeting, in approving the third tranche of stage I of the HCFC phase-out management plan (HPMP) for Côte d'Ivoire, the Executive Committee requested the Government of Côte d'Ivoire and UNEP to implement the measures recommended in the verification report submitted to the 84th meeting and to report, through UNEP, at the 86th meeting, on the adoption of the inter-ministerial decree for regulating import, export, transit, re-export and trade of ODS, and other measures on strengthening monitoring and reporting systems relating to HCFC import and export (decision 84/71(e)).

51. In response to decision 84/71(e), UNEP has submitted a detailed report as summarized below:

- (a) The inter-ministerial decree for regulating import, export, transit, re-export, distribution, marketing, possession and use of ODS has been drafted, discussed and approved by the National Ozone Committee in January 2020 and signed by the Minister of Environment and Sustainable Development and the Minister of Commerce and Industry in April 2020; currently, it is awaiting the signature of the Minister of Finance. The implementation of the inter-ministerial decree will formalize and strengthen the coordination among the relevant ministries and departments;
- (b) The Ministry of Commerce and Industry has designated its Ozone Focal Point, to represent the Ministry at National Ozone Committee meetings;
- (c) All authorizations to import ODS are issued by the Ministry of Commerce and Industry only after consulting with the Ministry of the Environment and Sustainable Development. The Customs Department is required to notify the national ozone unit (NOU) and the Ministry of Commerce and Industry of each suspicious shipment of refrigerants and invites their presence when the goods are being inspected prior to being released;
- (d) The Ministry of Commerce and Industry is responsible for monitoring the quality of products in the market; the National Ozone Committee instructs the NOU to undertake regular market visits to ensure all goods are declared and to monitor sales outlets for contaminated refrigerants, if any. A visit was organized in March 2020 by the Directorate General of Environment, accompanied by the NOU, the Police, the Directorate General of Trade and the Customs Department; another visit that was planned for June 2020 has been postponed due to COVID-19 restrictions. During the first visit, no contaminated refrigerant was found in the market; and
- (e) The National Ozone Committee requires refrigerant retailers to keep records of all refrigerants that they buy and use, and inform the NOU if they find any counterfeit or contaminated refrigerants. The NOU, together with environment inspectors, is responsible for monitoring the records kept by the refrigerant outlets and owners of refrigeration and

air-conditioning workshops.

52. In addition to the approval of the inter-ministerial decree:
- (a) A coordination meeting was held in Guinea-Bissau in December 2019 on the extension of the Tariff and Statistical Nomenclatures (TSN) of the Common External Tariff (CET) of the Economic Community of West African States (ECOWAS) Member States (which includes Côte d'Ivoire), to the Harmonized System (HS) code to facilitate the collection and comparison of data concerning the consumption of HFCs. Discussions are currently ongoing between Environment Ministries and Customs Departments of ECOWAS to harmonize and adopt a HS code to accommodate the substances controlled under the Kigali Amendment;
 - (b) Training was provided to 20 customs officers, 15 environment inspectors and 10 trade and industry officers in Abidjan in February 2020 on controlling and monitoring ODS under the HPMP; additional training would be undertaken during 2020; and
 - (c) The documents developed in the training curricula of environment inspectors and customs officers will be updated and introduced in the training school for trade and industry officers.

Secretariat's comments

53. The Secretariat notes that the Government of Côte d'Ivoire has approved the inter-ministerial decree and implemented other measures on strengthening monitoring and reporting systems relating to HCFC import and export, as recommended in the verification report submitted to the 84th meeting.

54. On the timing of the signing of the inter-ministerial decree by the Minister of Finance, UNEP clarified that this is directly being followed up by the Minister of Environment and Sustainable Development; only the Prime Minister can promulgate the inter-ministerial decree after the three Ministers have signed. Unfortunately, the Prime Minister of Côte d'Ivoire passed away in July 2020 and a new Cabinet, including a new Minister of Finance, has just been in place; in view of this, the process of signing the inter-ministerial decree will be delayed.

Recommendation

55. The Executive Committee may wish:
- (a) To note the report on the adoption of the inter-ministerial decree for regulating import, export, transit, re-export and trade of ODS, and other measures on strengthening monitoring and reporting systems relating to HCFC import and export under stage I of the HCFC phase-out management plan for Côte d'Ivoire, submitted by UNEP and contained in document UNEP/OzL.Pro/ExCom/86/21; and
 - (b) To request the Government of Côte d'Ivoire to provide an update, through UNEP, at the 87th meeting, on the adoption of the inter-ministerial decree for regulating import, export, transit, re-export and trade of ODS.

Egypt: HCFC phase-out management plan (stage I – progress report) (UNIDO and UNDP)**Background**

56. On behalf of the Government of Egypt, UNIDO as the lead implementing agency, has submitted the progress report on the implementation of the work programme associated with the final tranche of the stage I of the HCFC phase-out management plan (HPMP) for Egypt, in line with decision 84/17(e).

HCFC consumption

57. The Government of Egypt reported a consumption of 288.30 ODP tonnes of HCFC in 2019, which is below the HPMP target of 289.70 ODP tonnes for 2019, and 25 per cent lower than the established baseline of 386.27 ODP tonnes.

58. The Government submitted sector consumption data under the 2019 country programme implementation report consistent with the data reported under Article 7 of the Montreal Protocol.

Progress report on the implementation of the final tranche of stage I*Polyurethane (PU) foam sector*

59. The PU foam sector plan has been completed. All nine PU foam manufacturing enterprises included in stage I,¹⁶ completed conversion with the total phase-out of 92.1 ODP tonnes of HCFC-141b both pure and contained in imported pre-blended polyols. Memoranda of agreement¹⁷ were signed with three systems houses to convert all 74 downstream customers¹⁸ to low-global-warming potential (GWP) foam blowing systems, including water, methyl formate and hydrofluoro-olefins. All alternatives are available on the local market. In addition, 100 micro foam users have been converted,¹⁹ and the ban on the import, use and export of HCFC-141b in bulk and the export of HCFC-141b contained in pre-blended polyols was implemented on 1 January 2020.²⁰

60. The distribution of 100 previously purchased safety kits (safety shoes, goggles, nitrile gloves, full body protective suit, face mask, and safety sheet in Arabic) to foam micro users was delayed due to the COVID-19 pandemic. In addition, eight small foam dispensers that would be made available for micro users to rent, were distributed to the systems houses, in line with the report on the demonstration project of low-cost options for the conversion to non-ODS technologies in PU foams at very small users.²¹

Enabling activities in the refrigeration and air-conditioning (RAC) sector

61. UNIDO had submitted a comprehensive report on the project on the promotion of low-GWP refrigerants for the air-conditioning (AC) industry in Egypt (EGYPRA) to the 84th meeting. While almost all activities under EGYPRRA had been completed by that time, additional time was required to complete the testing for the central AC units, which have already been built, to draft the final report, and develop a

¹⁶ Including six enterprises (funding for which was approved at the 62nd meeting) incorporated in stage I at the 65th meeting. The HCFC-141b phase-out project at Delta Electric Appliances, at a total cost of US \$422,740, plus agency support costs was approved at the 62nd meeting; following the purchase of the enterprise by non-Article 5 entity the project had been cancelled and the approved funding was returned to the Fund at the 70th meeting.

¹⁷ UNDP's project implementation arrangement.

¹⁸ Of the 81 small- and medium-sized enterprises that had been identified at the 65th meeting when the stage I was submitted, seven were no longer manufacturing foam.

¹⁹ Of the approximately 361 micro users that had been indicated at the 65th meeting, 100 were identified to still manufacture foam.

²⁰ The Government banned the import of HCFC-141b in pre-blended polyols as of 1 January 2018.

²¹ UNEP/OzL.Pro/ExCom/84/22.

modelling tool that can be used by local manufacturers. Accordingly, the Executive Committee decided to approve the extension of stage I of the HPMP to 30 June 2020 to allow completion of EGYPRA (decision 84/17(c)).

62. The planned work on the modelling tool was completed; further improvements to the model will be conducted, as planned, under the second tranche of the stage II of the HPMP. However, testing of the central AC units has been delayed due to the unavailability of the testing laboratory due to the COVID-19 pandemic. UNIDO expects the testing could be carried out in the last quarter of 2020, the results analyzed, and the final report drafted in the first quarter of 2021. Accordingly, UNIDO requested an extension of stage I of the HPMP to 31 March 2021.

Level of fund disbursement

63. As of September 2020, of the US \$6,148,975²² approved so far, US \$5,525,324 had been disbursed (US \$1,363,807 for UNIDO and US \$4,161,517 for UNDP) as shown in Table 4.

Table 4. Financial report of stage I of the HPMP for Egypt (US \$)

Tranche		UNIDO	UNDP	Total	Disbursement rate (%)
First	Approved	950,000	2,000,000	2,950,000	100
	Disbursed	947,966*	1,988,166	2,936,132	
Second	Approved	250,000	2,000,000	2,250,000	92
	Disbursed	249,996*	1,812,617	2,062,613	
Third	Approved	232,575	716,400	948,975	55
	Disbursed	165,845	360,734	526,579	
Total	Approved	1,432,575	4,716,400	6,148,975	90
	Disbursed	1,363,807*	4,161,517	5,525,324	

* Remaining balances of US \$2,034 and US \$4 already returned to the Multilateral Fund.

Secretariat's comments

64. The Secretariat noted that the PU foam sector plan has been completed and the Government had banned the import, use and export of HCFC-141b in bulk and the export of HCFC-141b contained in pre-blended polyols on 1 January 2020.

65. The Secretariat noted the efforts undertaken by the Government of Egypt, UNIDO and the participants of the EGYPRA project to complete the activity by 30 June 2020, in line with decision 84/17(c). Notwithstanding those efforts, the project could not be completed due to delays associated with the COVID-19 pandemic. Noting the rapidly evolving nature of the COVID-19 pandemic, it was considered prudent to extend the stage I of the HPMP to 30 June 2021, to complete the enabling activities in the RAC sector only as all other activities have been completed. UNDP will financially complete its projects by 31 December 2020, while UNIDO will financially complete its projects and submit the project completion report for stage I of the HPMP by 31 December 2021.

Recommendation

66. The Executive Committee may wish:

- (a) To note the progress report on the implementation of the work programme associated with the final tranche of the stage I of the HCFC phase-out management plan (HPMP) for Egypt submitted by UNIDO, contained in document UNEP/OzL.Pro/ExCom/86/21;

²² In addition, US \$2,371,840 plus agency support costs was approved for six investment projects at the 62nd meeting and included in stage I (excluding funding for Delta Electric Appliances that subsequently withdrew from stage I).

- (b) To note that the conversion of the polyurethane foam manufacturing sector under stage I had been completed;
- (c) To further note that the Government of Egypt had banned the import, use and export of HCFC-141b in bulk and the export of HCFC-141b contained in pre-blended polyols on 1 January 2020;
- (d) To approve, on an exceptional basis given the constraints imposed by the COVID-19 pandemic, the extension of stage I of the HPMP to 30 June 2021 to allow the completion of the outstanding enabling activities in the refrigeration and air-conditioning (AC) sector on the understanding that:
 - (i) UNDP would financially complete its projects by 31 December 2020; and
 - (ii) UNIDO would financially complete its projects and submit the project completion report by 31 December 2021; and
- (e) To request the Government of Egypt and UNIDO to submit the final report on the project on the promotion of low-global-warming potential refrigerants for the AC industry (EGYPRA) to the 87th meeting.

Ghana: HCFC phase-out management plan (stage I - progress report) (UNDP and the Government of Italy)

Background

67. At its 84th meeting, the Executive Committee requested, *inter alia*, the Government of Ghana, UNDP and the Government of Italy to submit progress reports on the implementation of the work programme associated with the final tranche on a yearly basis until the completion of the project, verification reports until approval of stage II of the HPMP (decision 84/73(b)).

68. On behalf of the Government of Ghana, UNDP as the lead implementing agency has submitted the annual progress report on the implementation of the work programme associated with the sixth and final tranche of the HPMP,²³ and a verification report on HCFC consumption, in 2019 in line with decision 84/73(b)).

HCFC consumption

69. The Government of Ghana reported HCFC consumption of 17.14 ODP tonnes in 2019, which is 67 per cent below the target of 51.57 ODP tonnes for the same year in its Agreement with the Executive Committee, and 70 per cent below the HCFC baseline of 57.30 ODP tonnes. The Government also reported HCFC sector consumption data under the 2019 country programme (CP) implementation report that is consistent with the data reported under Article 7 of the Protocol.

70. The HCFC consumption has been gradually decreasing due to the implementation of the HPMP and the introduction of alternative technologies on the market, mainly HFCs and hydrocarbons. In 2019, HCFCs account for 52 per cent of the total refrigerant imports, followed by HFCs (43 per cent, consisting of HFC-134a: 21 per cent; R-410A: 7 per cent; R-404A 6 per cent; R-407C: 4 per cent; and other miscellaneous HFCs: 4 per cent), and hydrocarbons (5 per cent).

Verification report

²³ The sixth and final tranche of stage I of the HPMP was approved at the 84th meeting at a total cost of US \$121,311, plus agency support costs of US \$9,098 for UNDP.

71. The verification report confirmed that the Government was implementing a licensing and quota system for HCFC imports and exports, and the verified consumption was 17.14 ODP tonnes, consistent with the amount reported under Article 7 of the Montreal Protocol and in the CP report. The Government of Ghana was in compliance with the Montreal Protocol and its Agreement with the Executive Committee.

Activities in the refrigeration servicing sector

72. The following activities are under different stages of implementation:

- (a) The development of a legal framework for certification of technicians is ongoing, taking into consideration HFC phase-down;
- (b) Three training centres have been established and equipped (in Kumasi, Takoradi and Accra) and are operational; the establishment of the fourth centre (in Tamale) is underway; the procurement of a refrigeration test board for the Accra technical training centre has been re-launched again in 2020 after an unsuccessful first round; the technical conformity of the bids with the terms of reference is being assessed;
- (c) Training of technicians and customs officers is on hold; however, plans have been made to start the training sessions when restrictions are relaxed following health and safety precautions due to the COVID-19 pandemic;
- (d) A handbook for good servicing practices and handling flammable refrigerants have been printed (1,500 copies) and distributed; and
- (e) Implementation plans are being prepared for the training of technicians in the installation and servicing of R-290-based air-conditioning units; the provision of servicing tools for handling flammable refrigerants; the monitoring of the use of R-290 air-conditioners to ensure safety; and dissemination of information on the use of low-GWP technology. implementation will start once the restrictions imposed by the COVID-19 pandemic are lifted.

Level of fund disbursement

73. As of October 2020, of the US \$1,356,311 approved for stage I of the HPMP, US \$1,196,840 (88 per cent) had been disbursed (US \$1,031,311 for UNDP, and US \$325,000 for the Government of Italy). A balance of US \$159,471 will be disbursed in 2021.

Secretariat's comments

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

Legal framework

74. The Government of Ghana has already issued HCFC import quotas for 2020 in line with the Montreal Protocol control target for the same year.

Refrigeration servicing sector

75. The progress in the implementation of activities was limited due to the constraints imposed by the COVID-19 pandemic. However, the Government is proactively planning and preparing for activities to be implemented when the restrictions are relaxed.

76. The Secretariat enquired about whether the legal framework being developed includes the ban on HCFC-based equipment and the timeline for its implementation. UNDP informed that this will be considered in stage II of the HPMP.

77. Ghana has established three training centres, and the refrigeration recovery, recycling and reclamation programme has been implemented. Training and tools have been provided to technicians to enable good servicing practices. The issue of ODS control has been incorporated into the training curriculum of customs officers to ensure sustainability. Stage I is planned to be completed by the end of 2021 as per paragraph 14 of the Agreement. Stage II will be submitted to the 87th meeting.

Recommendation

78. The Executive Committee may wish to note the 2020 progress report on the implementation of stage I of the HCFC phase-out management plan (HPMP) for Ghana submitted by UNDP, contained in document UNEP/OzL.Pro/ExCom/86/21.

Jordan: HCFC phase-out management plan (stage II – report on the status of implementation of the activities) (World Bank)

Background

79. At its 84th meeting, the Executive Committee approved the second tranche of stage II of the HCFC phase-out management plan (HPMP) for Jordan on the understanding that the World Bank would provide an update at the 86th meeting on the status of implementation of the activities in stage II (decision 84/76(b)).

80. In response to decision 84/76(b), the World Bank has submitted a detailed progress report as summarized below.

Polyurethane (PU) and spray foam manufacturing sector

81. 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. The status of implementation of the 11 largest foam enterprises with a consumption above 6 metric tonnes (mt) of HCFC-141b is presented in Table 5.

Table 5. Status of implementation of the 11 largest foam enterprises under stage II of the HPMP

Enterprise	Consumption (mt)	Application	Technology selected	Status of implementation
Al Qanadeel	12.0	Discontinuous panels	Cyclopentane	Expected date of completion June 2021
Al Safa for Insulated Boards	35.0	Discontinuous panels	Cyclopentane	Expected date of completion June 2021
Prefabricated Building	11.83	Discontinuous panels	Cyclopentane	Expected date of completion March 2021
Yousef Workshop	15.5	Discontinuous panels	Cyclopentane	Expected date of completion March 2021
Jordan Pioneer	23.8	Continuous panels	Cyclopentane	Expected date of completion December 2021
Jordan Manufacturing and Services Solutions (JMSS)	30.0	Discontinuous panels	HFO	Considering converting to cyclopentane; if change in technology is finalised, a proposal would be submitted to the Executive Committee
Jordan Light Vehicle Manufacturing LLC	15.0	Refrigerated transport	HFO	Considering converting to cyclopentane; if change in technology is finalised, a proposal would be

				submitted to the Executive Committee
Ideal Solar Energy Co./Hanania	6.0	Solar heaters	HFO	Signing of sub-grant agreement (SGA) expected fourth quarter of 2020
Abdin Industrial	8.8	Commercial refrigeration	HFO	Signing of SGA expected fourth quarter of 2020
Abu Haltam	17.0	Domestic refrigerator	HFO	Confirmed interest in converting to cyclopentane
Shams Al-ram Tri	18.0	Discontinuous panels	Cyclopentane	Signing of SGA expected third quarter of 2020

82. The activities for the procurement of HFO-1233zd-based formulations for the enterprises under the spray foam conversion project are progressing; the second round of shipment of the foam formulations is ongoing with delivery of foam-blowing agent and other raw materials for producing PU foam. The activities are expected to be completed as planned.

83. However, implementation of the following activities has been impacted by the constraints due to the COVID-19 pandemic:

- (a) Development of regulations for prohibitions of HCFC-141b import, as consultations with Government authorities and stakeholders could not be organized. Once the COVID-19 restrictions are lifted (possibly in the fourth quarter of 2020 or early 2021), the Government will develop and finalize regulations, which would include issuing import quotas for HCFC-141b contained in pre-blended polyols and monitoring imports, and introducing incentives facilitating the adoption of low-global-warming potential (GWP) foam blowing alternatives; and
- (b) Activities for the conversion of SMEs, including a workshop for the selection of alternative technologies, are delayed by 9 to 12 months as technical consultations with systems houses from the region could not be undertaken. Once COVID-19 restrictions are lifted, the project implementation and monitoring unit (PMU) will organize the workshop on the adoption of alternative technologies, and invite a systems house in the region, to provide technical assistance to SMEs for evaluation of pre-blended polyols with HFO and trial production.

Refrigeration servicing sector

84. The activities agreed in the sector plan have started and are progressing, with certain limitations due to COVID-19 (e.g., in-person training of service technicians and consultations on activities, stakeholder meetings regarding updating of national codes). Three technical experts have been recruited and have started undertaking a review and update of both the training programme and the certification scheme of refrigeration and air-conditioning (RAC) technicians, and the training programme of customs officers; and the development of a manual for the servicing sector along with specifications of RAC equipment, for recovery and recycling.

85. An update of national codes on the design, servicing installation, labelling and maintenance for RAC equipment would be undertaken by the end of 2021; these codes would be updated based on international standards and in consultation with the Civil Defense Directorate, the Jordan Standards and Metrology Organization, and the Climate Change Directorate in the Ministry of Environment.

86. Ten refrigerant identifiers are proposed to be procured in 2021 for customs and enforcement authorities for inspection of refrigerant consignments for preventing illegal trade of ODS.

87. Training programmes on good servicing practices and the use of low-GWP and toxic refrigerants in RAC equipment are planned to commence after October 2020, pending the lifting of COVID-19

restrictions. Criteria for service workshops are being developed by technical experts and will be completed by 2021, to enable project supervisors to choose the workshops to which the specified criteria are applied, for providing those workshops with recovery equipment and to involve their technicians in training programmes.

88. Information material (e.g., posters and brochures) have been developed, presenting information relating to HCFC phase-out, the Kigali Amendment, the Harmonized System codes for refrigerants, issues relating to design and safe use of flammable and toxic refrigerants, and recovery and reuse of refrigerants; other information material is still under development. Seminars and training workshops covering technical aspects relating to servicing of HCFC-based equipment, use of alternative refrigerants, recovery and reuse of refrigerants and other activities, are planned for, *inter alia*, the Ministry of Industry and Trade, vocational training centres, chambers of industries and of commerce, manufacturers and maintenance workshops in the RAC sector, the private sector, customs authorities, standards organisations and non-governmental organizations. These activities would be implemented during the period 2020-2021.

Level of fund disbursement

89. As of September 2020, of the US \$2,473,530 approved so far, US \$612,155 had been disbursed (US \$313,170 for the World Bank and US \$298,985 for UNIDO) as shown in Table 6. The balance of US \$1,861,375 will be disbursed in 2020 and 2021.

Table 6. Financial report of stage II of the HPMP for Jordan (US \$)

Agency	First tranche		Second tranche		Total approved	
	Approved	Disbursed	Approved	Disbursed	Approved	Disbursed
World Bank	526,956	146,785	1,013,554	166,385	1,540,510	313,170
UNIDO	392,171	275,681	540,849	23,304	933,020	298,985
Total	919,127	422,466	1,554,403	189,689	2,473,530	612,155
Disbursement rate (%)	46		12		25	

Gender policy implementation

90. In line with decision 84/92(d),²⁴ the World Bank, UNIDO and the Government will take into account relevant policies during the implementation of stage II to provide equal opportunity for participation of female trainers, technicians and technical experts.

Secretariat's comments

91. The World Bank explained that the restrictions imposed by COVID-19 have impacted the pace of implementation of the foam and the servicing sector plans particularly in relation to activities that require face-to-face programmes and consultations. The preparatory work relating to development of technical documents for servicing equipment, consultations with Government representatives on standards development, customs and enforcement training, and preparatory work for support to SMEs in the foam sector would be undertaken in the fourth quarter of 2020 once the restrictions relating to COVID-19 are removed. In case restrictions remain, 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.

92. Upon request for clarification, the World Bank explained that the Government would undertake steps to develop and implement regulations for phase-out of HCFC-141b in bulk and contained in imported pre-blended polyols by 1 January 2022, taking into consideration the timing of implementation of the full

²⁴ Decision 84/92(d) requested bilateral and implementing agencies to apply the operational policy on gender mainstreaming throughout the project cycle.

conversion of the SMEs.

93. The Secretariat reviewed the revised project proposal for the conversion of the enterprise Abu Haltam to cyclopentane technology, and confirmed that there would be no savings associated with the change in technology. Accordingly, noting the availability of cyclopentane technology from suppliers in the country and in the region, the successful conversion of foam enterprises to cyclopentane, and that the conversion is in line with paragraph 7(a) of the Agreement with the Executive Committee, the Secretariat recommended approval of the change in technology.

Recommendation

94. The Executive Committee may wish:

- (a) To note the report on the status of implementation of the activities in stage II of the HCFC phase-out management plan (HPMP) for Jordan, submitted by the World Bank and contained in document UNEP/OzL.Pro/ExCom/86/21; and
- (b) To approve the change of technology in the conversion of the enterprise Abu Haltam from HFOs to a cyclopentane foam-blowing agent, on the understanding that any additional costs incurred would be covered by the enterprise.

Libya: HCFC phase-out management plan (stage I – progress report) (UNIDO)

Background

95. At their Twenty-seventh Meeting, the Parties noted that the annual HCFC consumption of 144.0 ODP tonnes reported by Libya for 2013 and 122.4 ODP tonnes for 2014 exceeded the country's maximum allowable consumption of 118.38 ODP tonnes for those controlled substances for those years, and that Libya was therefore in non-compliance with the consumption control measures for HCFCs under the Protocol. The Parties also noted with appreciation the submission by Libya of a plan of action to ensure its return to compliance with the Protocol's HCFC control measures, under which Libya specifically committed itself to reducing HCFC consumption from 122.4 ODP tonnes in 2014 to no greater than:

- (a) 122.30 ODP tonnes in 2015;
- (b) 118.40 ODP tonnes in 2016 and 2017;
- (c) 106.50 ODP tonnes in 2018 and 2019;
- (d) 76.95 ODP tonnes in 2020 and 2021; and
- (e) Levels allowed under the Montreal Protocol in 2022 and subsequent years.

96. Subsequently, at its 75th meeting the Executive Committee approved stage I of the HPMP for Libya to facilitate its implementation of the plan of action to return to compliance. The control targets proposed in the plan of action were used as the Montreal Protocol control targets for stage I.

97. At its 82nd meeting, the Committee approved the second and final tranche of stage I of the HPMP and requested the Government of Libya and UNIDO to submit a progress report on the implementation of the work programme associated with the final tranche, and a verification report on consumption each year until the completion of stage I (decision 82/75).

98. At its 84th meeting, the Executive Committee noted *inter alia* the challenging security situation in the country and extended stage I of the HPMP to 31 December 2021 on the understanding that a revised

draft Agreement between the Government of Libya and the Executive Committee would be submitted at the 86th meeting, along with the progress report on implementation of the work programme and a verification report (decision 84/20).

99. In line with decision 84/20, on behalf of the Government of Libya, UNIDO as lead implementing agency has submitted the above-mentioned progress report, the verification report and the revised draft Agreement.

HCFC consumption

100. The Government of Libya reported a consumption of 76.65 ODP tonnes of HCFCs in 2019, which is 29.85 ODP tonnes lower than the control target set in the plan of action for that year. HCFC consumption has been decreasing since 2014 due to the implementation of the HPMP, particularly through the licensing and quota system, which limited imports of HCFCs, and through the gradual introduction of non-HCFC equipment. The reduction in HCFC consumption is also due to the security and economic situation in the country.

Verification report

101. The verification report confirms that the Government is implementing a licensing and quota system for HCFC imports and exports, and that Libya was in compliance with the Montreal Protocol control target in 2019.

Progress report

102. The implementation of the HPMP has been hindered and slowed down considerably by the continuing unstable political situation and worsening security situation in the country over the last year and a half. The national ozone unit (NOU) has made best efforts to monitor imports and collect consumption data. The NOU informed the customs authorities and importers regarding the established import quotas, and import quotas were monitored on a quarterly basis. While efforts were made to collect data from all the regions, it has not been possible to verify consumption in some regions due to ongoing military operations. The Environment General Authority (EGA) regional offices are striving to carry out their respective assignments and stay connected to the central office in Tripoli.

103. A list of equipment for the training of servicing technicians and for practical use by technicians has been developed and shared with the NOU. Procurement is expected to begin in the last quarter of 2020 once agreed by the NOU. Due to the security situation, it is impossible to implement other activities in the servicing sector. There has been no progress in the investment projects since last reporting.

Level of fund disbursement

104. As at October 2020, of the US \$1,161,310 approved for stage I of the HPMP,²⁵ US \$699,694 (representing 60.2 per cent) had been disbursed.

Secretariat's comments

Legal framework

105. The Government has issued quotas for 2020 at the level of 74.47 ODP tonnes, which is below the 35 per cent reduction target of 76.95 ODP tonnes under the Montreal Protocol for that year.

²⁵ The funding tranche was adjusted after deducting US \$747,533 associated with the cancellation of the conversion of one enterprise in the foam sector (Alyem); these funds have been returned to the Multilateral Fund.

Progress report

106. Upon enquiry on the current status of the equipment manufactured for the conversion of two foam manufacturing enterprises, UNIDO reported that the equipment for Al Najah has been delivered. Subsequent installation was planned but could not be carried out because experts were unable to travel to the country due to security reasons. Equipment for Al Najm is at the manufacturer's premises, ready for final adjustments according to the beneficiary's requirements and layout, and has not yet been delivered. The NOU has reported that the beneficiary enterprises are ready to receive the equipment, technical visits from suppliers and subsequent installation; however, the suppliers are not in a position to travel to Libya because of security situation.

107. UNIDO has been providing guidance and technical assistance to the NOU remotely (through electronic communications and by telephone) on the legal framework covering the controls for HCFCs and HCFC-based equipment, and HFCs as well as on the introduction of alternatives (hydrocarbons, CO₂ and HFOs). The EGA has sent a request to the Ministry of Foreign Affairs to take the necessary action to speed up the process of ratification of the Kigali Amendment; the request has been transferred to Parliament.

Revision of the Agreement

108. In accordance with decision 84/20, the Secretariat has updated paragraph 1, Appendix 2-A of the Agreement between the Government of Libya and the Executive Committee to reflect the extension of the stage I of the HPMP. Paragraph 16 has also been added to reflect that the updated Agreement supersedes that agreed at the 75th meeting. The updated Agreement will be appended to the final report of the 86th meeting.

Recommendation

109. The Executive Committee may wish:

- (a) To note the progress report on the implementation of stage I of the HCFC phase-out management plan (HPMP) for Libya, submitted by UNIDO and contained in document UNEP/OzL.Pro/ExCom/86/21; and
- (b) To further note that the Fund Secretariat has updated the Agreement between the Government of Libya and the Executive Committee, as contained in Annex I to the present document, specifically: paragraph 1 and Appendix 2-A to extend stage I of the HPMP to 2021; and paragraph 16, added to indicate that the updated Agreement supersedes that reached at the 75th meeting.

Malaysia: HCFC phase-out management plan (stage II – change in technology at 11 enterprises) (UNDP)

Background

110. At its 77th meeting, the Executive Committee approved in principle, stage II of the HCFC phase-out management plan (HPMP) for Malaysia²⁶ for the period 2016 to 2022 to reduce HCFC consumption by 42.9 per cent of its baseline, in the amount of US \$6,138,063, plus agency support costs of US \$429,665 for UNDP.

111. Stage II included funding for the conversion of 67 polyurethane (PU) foam enterprises, of which 57 are small- and medium-sized enterprises, to low-global-warming potential alternatives; an additional 10 non-eligible enterprises will phase out their consumption without support from the Multilateral Fund, which will lead to complete phase-out of HCFC-141b in the PU foam sector by 1 January 2022. A staged

²⁶ UNEP/OzL.Pro/ExCom/77/54.

approach was planned, whereby enterprises with consumption of 20 metric tonnes (mt) or higher would convert to cyclopentane pure or pre-blended in polyol systems, and smaller-sized enterprises would convert under the second and third tranches to reduced hydrofluoroolefins (HFOs) formulations, though some might convert to methylal.

112. At the 84th meeting, UNDP reported that memoranda of agreement were signed with 12 enterprises, two of which have completed their conversion to cyclopentane with an associated phase-out of 12.32 ODP tonnes of HCFC-141b; the conversion of a further eight enterprises was advancing and would result in the phase-out of 28.99 ODP tonnes of HCFC-141b; and an additional two smaller enterprises, with consumption of 2.54 ODP tonnes of HCFC-141b, were expected to complete their conversion in 2020.

113. UNDP further reported that given concerns about the stable supply of HFO blowing agents and the immediate commercial availability of cyclopentane pre-blended polyol systems from four systems houses in the country, seven enterprises (i.e., Allied Foam, Astino, Century, Gai Hin, Hewgant, Insulated Box, and Roto Speed) were considering to change technology from HFOs to pre-blended cyclopentane; however, the final decision by those enterprises was pending the results of ongoing tests of different formulations. UNDP also confirmed that the enterprises would co-finance any additional costs if they were to decide on the change in technology. During the review process, the Secretariat assessed the eligible incremental costs to convert to cyclopentane pre-blended polyol systems, and concluded that there would be no savings associated with such a change in technology. Accordingly, the Executive Committee decided that those enterprises would have flexibility to change technology to pre-blended cyclopentane during implementation, on the understanding that the conversions would not be delayed and any additional costs would be covered by the enterprises; and UNDP would report on this matter when submitting the request for the third tranche of the HPMP (decision 84/77(b)).

114. At the 85th meeting, UNDP reported that those seven enterprises had confirmed their change of technology to pre-blended cyclopentane, and submitted a request to change the technology for a further 14 enterprises from HFOs to pre-blended cyclopentane polyol systems. Through the intersessional approval process, the Executive Committee approved that change in technology for the 14 foam enterprises on the understanding that the conversions would not be delayed and any additional costs would be covered by the enterprises.

Request for change of technology

115. In accordance with paragraph 7(a)(v) of the Agreement between the Government of Malaysia and the Executive Committee, the Government through UNDP has submitted to the 86th meeting a request to change the technology for an additional 11 enterprises from HFOs to pre-blended cyclopentane polyol systems, listed in Table 7. UNDP confirmed that the enterprises would co-finance any additional costs associated with the change in technology.

Table 7. Enterprises to convert from HFO to cyclopentane pre-blended polyol systems

Enterprise	Application	HCFC-141b (mt) in 2015	Approved funding (US \$)
ALPS Polymer (M) Sdn Bhd	Thermoware	5.00	33,476
KIM Refrigeration Industries Sdn Bhd	Commercial refrigeration	4.20	29,025
Thermo Cooling Engineering Sdn Bhd	Discontinuous panels	4.15	28,747
Nature Panel Sdn Bhd	Discontinuous panels	3.80	26,800
Speed Electrical & Air-Conditioning	Discontinuous panels	3.67	26,077
Ocean Parade Industries	Commercial refrigeration	3.50	25,131
MSM Equipment Manufacturer Sdn Bhd	Commercial refrigeration	3.30	24,018
MCE Marketing Sdn Bhd	Discontinuous panels	3.00	22,349
Syarikat Kejuruteraan Elecktrik FookMei Sdn Bhd	Commercial refrigeration	2.59	20,068
Manik Prestasi Sdn Bhd	Discontinuous panels	1.49	13,948
Syarikat Tung kiong Trading	Discontinuous panels	0.50	5,611

Enterprise	Application	HCFC-141b (mt) in 2015	Approved funding (US \$)
Total		35.20	255,250

Secretariat's comments

116. UNDP confirmed that the 11 enterprises were visited to confirm their capability to safely use pre-blended cyclopentane. The experience of other enterprises in the foam sector that already converted to cyclopentane has been positive; the supply chain of polyols, isocyanate, surfactants, additives and pre-blended cyclopentane is well established in Malaysia, and enterprises consider hydrocarbons a long-term solution for their PU foam sector applications. To date, UNDP had not received reports of any problems with the acceptance of final PU products at the client level.

117. The Secretariat undertook a detailed assessment of the eligible incremental costs to convert the 11 enterprises to pre-blended cyclopentane polyol systems, which confirmed that there would be no savings associated with the change in technology. Accordingly, and noting the commercial availability of pre-blended cyclopentane systems from the four systems houses in the country and the successful conversion of other foam enterprises to that alternative, the Secretariat recommends approval of the change in technology.

118. Regarding the remaining 25 enterprises, with an aggregated consumption of 58.10 mt of HCFC-141b and total approved funding of US \$434,229 to convert to HFOs under stage II of the HPMP and that had not requested a change in technology, UNDP confirmed that it would continue to support the enterprises in assessing, with their systems houses, the availability in Malaysia of HFO systems at a competitive price. Should any of those enterprises wish to change technology, UNDP would submit to the Committee a request for a change in technology in line with the conditions specified in the Agreement.

Recommendation

119. The Executive Committee may wish:

- (a) To note the request submitted by UNDP on behalf of the Government of Malaysia for the change in technology in 11 foam enterprises, from hydrofluoroolefins (HFOs) to pre-blended cyclopentane polyol systems in the context of stage II of the HCFC phase-out management plan contained in document UNEP/OzL.Pro/ExCom/86/21; and
- (b) To approve the change in technology for those 11 foam enterprises, from HFOs to pre-blended cyclopentane polyol systems on the understanding that the conversions would not be delayed and any additional costs would be covered by the enterprises.

Maldives: HCFC phase-out management plan and demonstration project for HCFC-free low-GWP alternatives in refrigeration in the fisheries sector – progress report (UNEP and UNDP)

Background

120. At the 84th meeting, UNEP provided a report on the status of implementation of the HCFC phase-out management plan (HPMP) for Maldives, which included an update on the demonstration project for HCFC-free, low-global-warming potential (GWP) alternatives in refrigeration for the fisheries sector, approved at the 76th meeting.²⁷ At that meeting, the Executive Committee *inter alia* requested UNEP to continue submitting progress reports on the implementation of the HPMP on a yearly basis until its completion on 31 December 2020 and to submit the project completion report (PCR) no later than the 87th meeting, and UNDP to submit to the 85th meeting the PCR for the demonstration project

²⁷ UNEP/OzL.Pro/ExCom/76/40

(decision 84/21).

121. Accordingly, on behalf of the Government of Maldives, UNEP has submitted the PCR for the demonstration project for HCFC-free, low-GWP alternatives in refrigeration for the fisheries sector,²⁸ and the progress report on the implementation of the HPMP.

Progress report on the implementation of the HPMP

122. UNEP reported that the implementation of the HPMP is progressing. The HCFC consumption reported by Maldives in 2019 was 1.21 ODP tonnes (22 mt) which is in line with the maximum allowable consumption under its Agreement with the Executive Committee, and 3.39 ODP tonnes (61.63 mt) below the HCFC baseline for compliance (i.e., 4.6 ODP tonnes, 83.63 mt).

123. The activities completed between October 2019 and August 2020 are the following:

- (a) A memorandum was signed between the Maldives Customs Services (MCS) and the Ministry of Environment and Energy for cooperation and continued training of customs and enforcement officers; 25 customs and enforcement officers and 20 customs brokers were trained on implementing the ODS licensing system; customs codes and a database for HFC imports were developed with the Customs office; and meetings were held with the MCS to discuss activities related to the sustained phase-out of HCFCs and the preparation for the HFC phase-down; and
- (b) Thirty-six service technicians participated in train-the-trainers' sessions of the refrigerant driving licence (RDL) organized by the Air-Conditioning, Heating and Refrigerating Institute and UNEP; one master trainer was trained in China on the safe use of flammable refrigerants in room air-conditioning (AC); and meetings and one workshop (58 participants) were held to discuss the challenges of HCFC phase-out and HFC phase-down in the tourism and fisheries sectors.

124. The following investment activities, implemented through UNDP, were completed:

- (a) The recovery, recycling and reclamation centre was established at the Maldives Polytechnic; two staff from the Maldives Polytechnic and one staff from the national ozone unit (NOU) participated in recovery and reclamation (R&R) training held in India; and
- (b) An additional four inverter type AC-HFC-32-based units of different cooling capacities were provided to beneficiaries (bringing the total equipment distributed to 132).

125. With the completion of the HPMP fast-approaching, the NOU is exploring options to sustain the achievements made, through integration of the continuing monitoring of the HPMP activities into the institutional strengthening project to be undertaken as part of the work of the NOU, and highlighting the lessons from HCFC phase-out during the implementation of the HFC enabling activities.

Financial report

126. As of August 2020, of the total funds of US \$1,100,000 approved, US \$1,072,097 (97.5 per cent) had been disbursed. The balance of US \$27,903 will be disbursed by June 2021.

Extension of the completion date of the HPMP

²⁸ Considered under the 2020 consolidated project completion report (UNEP/OzL.Pro/ExCom/86/22)

127. The Government of Maldives, through UNEP, is requesting for an extension of project implementation from 31 December 2020 to 30 June 2021 due to delays caused by constraints imposed by the COVID-19 pandemic. The activities to be completed are summarized in Table 8.

Table 8. Remaining activities of the HPMP for Maldives

Activities	2020 (US \$)	2021 (US \$)	Date of completion
HCFC phase-out policies and enforcement			
One workshop for 15 law enforcement officers on sustaining the HCFC phase-out		800	31 March 2021
Two training in the RAC servicing sector for 20 participants	300	300	31 March 2021
Enhanced awareness and outreach			
General information campaign to support HPMP implementation especially to encourage consumers to use equipment using low-GWP refrigerants		1,000	31 March 2021
HPMP closure to recognize the efforts of stakeholders		2,000	30 June 2021
Printing and translation to the local language of reference materials prepared by UNEP (i.e., WhatGas, etc.)	1,000	1,200	31 March 2021
Plan for gradual reduction of HCFC consumption			
One workshop for the fisheries and tourism sectors for 20 participants		600	31 March 2021
Support to the certification programme through meetings, consultations and enhancing capacity of Technical and Vocational Education and Training (TVET)	11,000	8,100	30 June 2021
Project coordination monitoring and management			
Two meetings on HCFC phase-out and servicing requirements beyond 2020		700	31 March 2021
Project completion report and closure		1,000	30 June 2021

Secretariat's comments

128. The Secretariat inquired about how the delay in the implementation of the certification programme for technicians would impact on the sustainability of the training of technicians, noting that the HPMP is expected to be completed by 30 June 2021 if the request for extension is approved. UNEP clarified that the certification system that will be put in place once the activities including meetings with stakeholders can be held, will initially be a voluntary system, which is expected to be developed into a mandatory system after experience from this stage is collected. It was also confirmed that with strengthened partnerships with vocational and technical institutes, training is expected to be sustainable for the technicians, the NOU will continue to provide information on technology developments to support these institutes.

Recommendation

129. The Executive Committee may wish:

- (a) To note the report on the implementation of the HCFC phase-out management plan (HPMP) for Maldives, submitted by UNEP and contained in document UNEP/OzL.Pro/ExCom/86/21; and
- (b) To further note the project completion report for the demonstration project for HCFC-free low-global-warming potential (GWP) alternatives in refrigeration in the fisheries sector in Maldives submitted by UNDP, in line with decision 84/21; and
- (c) To approve, on an exceptional basis due to the delays imposed by the COVID-19 pandemic, the request of the Government of Maldives to extend the completion date of the HPMP from 31 December 2020 to 30 June 2021 and to request UNEP to submit no later than the

89th meeting the project completion report for the HPMP.

Morocco: HCFC phase-out management plan (stage I – verification report) (UNIDO)

Background

130. In response to decision 83/57(d),²⁹ at the 85th meeting, UNIDO as the lead implementing agency, submitted on behalf of the Government of Morocco the annual progress report on the implementation of the work programme associated with the third and final tranche of the HPMP; however, the verification report could not be presented to the 85th meeting due to the constraints imposed by COVID-19 pandemic. The Executive Committee subsequently decided to note the progress report on the implementation of stage I of the HPMP for Morocco on the understanding that:

- (a) A commitment had been made by UNIDO that the verification report would be submitted to the Secretariat not later than twelve weeks prior to the 86th meeting, that the recommendations included therein would be addressed during the implementation of the third tranche of stage I of the HPMP, and that the actions implemented towards that end would be included in the progress report of stage I of the HPMP; and
- (b) In the event that the verification report confirmed that Morocco had not been in compliance with the Montreal Protocol and its Agreement with the Executive Committee, the Secretariat would inform the Executive Committee so that relevant actions, *inter alia*, the application of the penalty clause, could be considered accordingly.

131. In line with the above decision, UNIDO has submitted the verification report for HCFC consumption in 2019 in Morocco.

Verification report

132. The verification report confirmed that the Government is implementing a licensing and quota system for HCFC imports and exports; the ban on the imports of HCFC-141b pure of 1 January 2015 is being enforced and no HCFC-141b pure was imported in 2019. The consumption in 2019 was 27.49 ODP tonnes, which is below the targets under the Montreal Protocol and in the Agreement between the Government of Morocco with the Executive Committee.

133. The consumption in the verification report for 2019 was 2.79 ODP tonnes higher than the 24.70 ODP tonnes reported for the same year under Article 7 of the Montreal Protocol, as it included some imports for which quotas were issued in 2018 arrived only in 2019 and took into account the reallocation of some quotas in 2019. The verification recommended to include the reallocated quotas and the imports based on previous year's quotas, which will be implemented by the Government in future years.

Secretariat's comments

134. Upon discussion, the Government of Morocco has revised the 2019 HCFC consumption data under Article 7 to 27.49 ODP tonnes, consistent with the verification report.

Recommendation

²⁹ The Government of Morocco and UNIDO were requested to submit progress reports on the implementation of the work programme associated with the third and final tranche, on a yearly basis until the completion of the project, verification reports until approval of stage II of the HPMP and the project completion report to the first meeting of the Executive Committee in 2022.

135. The Executive Committee may wish to note the verification report on HCFC consumption in 2019 for Morocco, submitted by UNIDO and contained in document UNEP/OzL.Pro/ExCom/86/21.

Tunisia: HCFC phase-out management plan (stage I – progress report) (UNIDO)

Background

136. At the 84th meeting, the Executive Committee approved the third and final tranche for stage I of the HPMP of Tunisia and requested, *inter alia*, the Government of Tunisia, UNIDO, UNEP, and the Government of France to submit progress reports on the implementation of the work programme associated with the final tranche on a yearly basis until the completion of the project, verification reports until approval of stage II of the HPMP and the project completion report to the 88th meeting (decision 84/80(b)). At the same meeting, the Executive Committee also approved stage II of the HPMP for Tunisia, and the corresponding first tranche.

137. In line with decision 84/80(b), on behalf of the Government of Tunisia, UNIDO as the lead implementing agency has submitted the progress report as summarized below.

HCFC consumption

138. The Government of Tunisia reported a consumption of 25.36 ODP tonnes of HCFCs in 2019, which is 38 per cent below the HCFC baseline for compliance of 40.7 ODP tonnes and 27 per cent below the maximum allowable consumption of 34.6 ODP tonnes set in its Agreement with the Executive Committee. The Government of Tunisia had issued a quota of 34.60 ODP tonnes for 2020, consistent with the maximum allowable consumption in the Agreement.

Progress report

139. In 2020, implementation of some of the ongoing activities included under the HPMP have slowed down due to the circumstances prevailing brought about by the COVID-19 pandemic. A summary of the status of implementation is presented below:

- (a) The concept for identifying end-users including the criteria for selecting beneficiaries in the incentive programme to encourage the use of new alternatives refrigerants has been prepared; the RAC association and industry stakeholders will use these to identify potential recipients;
- (b) Eight virtual meetings were held with the national ozone unit and the international refrigeration expert to review the codes and standards for use of flammable and natural refrigerants, and a local workshop was held to present the results;
- (c) A training module for flammable and natural refrigerants was developed and will be included as part of the overall training manual for refrigeration and air-conditioning (RAC) technicians. Training programmes for refrigeration technicians have been delayed, and are expected to re-start before the end of 2020; and
- (d) Customs authorities were assisted remotely through webinars and remote meetings where materials were provided; once restrictions are lifted, face to face customs training programmes will be conducted.

Level of fund disbursement

140. As at October 2020, of the total of US \$700,458 approved for stage I of the HPMP, US \$427,952 (representing 54 per cent) had been disbursed. The balances of US \$272,506 will be disbursed by

December 2021.

Secretariat's comments

141. The Secretariat noted that despite the COVID-19 pandemic, some activities related to the work plan for the third tranche were conducted. Regarding the end-user incentive programme (to be implemented through the Government of France), UNIDO explained that implementation of the pilot demonstration project will encourage the use of zero-ODP and low-GWP alternative technologies (i.e., trans-critical CO₂ and HC/HFO cascade systems) in supermarket applications particularly among small and medium-sized users by converting one or two beneficiaries; the cost of conversions will be borne by the beneficiaries. In addition to the conversion of two beneficiaries, this programme is also expected to provide technical assistance and advice for owners of small installations to encourage their conversion to low-GWP refrigerants relevant to their applications through the lessons learned from the conversions which will be shared through workshops, meetings, study tours, and site visits to the successful installations. In collaboration with the refrigeration association, these small owners will receive the technical know-how on installation, maintenance and servicing of these systems. Around 50 users are expected to participate in the technical workshops.

142. In line with decision 84/84(d), the Government of France will submit a detailed report on the results of the pilot demonstration project for the use of zero-ODP and low-GWP alternative technologies by small and medium users in the servicing sector once it has been completed, to allow the Secretariat to develop fact sheets to inform future projects.

143. UNIDO also confirmed that barring any other delays caused by the pandemic, the completion of the stage I of the HPMP is on track for 31 December 2021.

Recommendation

144. The Executive Committee may wish:

- (a) To note the progress report on the implementation of stage I of the HCFC phase-out management plan (HPMP) for Tunisia, submitted by UNIDO and contained in document UNEP/OzL.Pro/ExCom/86/21;
- (b) To request the Government of France to submit a detailed report on the results of the pilot demonstration project for the use of zero-ODP and low-GWP alternative technologies by small and medium users in the servicing sector once it has been completed, to allow the Secretariat to develop fact sheets to inform future projects, in line with 84/84(d); and
- (c) To request the Government of Tunisia, UNIDO, UNEP and the Government of France to submit, at the 88th meeting, the final progress report on the implementation of the work programme associated with stage I of the HPMP, and the project completion report to the second meeting of the Executive Committee in 2022.

Methyl bromide (MB)

Argentina: Methyl bromide (MB) phase-out plan (UNIDO)

145. At its 30th meeting, the Executive Committee approved the project for the phase-out of MB in strawberry, protected vegetables and cut flower production in Argentina, and at its 36th meeting, approved the project for the phase-out of MB for soil fumigation in tobacco and non-protected vegetable seed-beds. The Agreement between the Government of Argentina and the Executive Committee was subsequently modified at the 45th meeting. While the Agreement explicitly excluded quarantine and pre shipment (QPS)

applications from the targets for national MB consumption, the Agreement did not include an exclusion for critical-use exemptions (CUEs) that the Parties to the Montreal Protocol may authorize, and instead specified zero national consumption of MB by 2015. The Parties authorized CUEs for Argentina at their 26th, 27th, 28th, 29th, 30th and 31st meetings for use in 2015, 2016, 2017, 2018, 2019 and 2020, respectively.

146. Argentina reported MB consumption of 24.7 ODP tonnes in 2019 which was less than the authorized CUEs of 24.8 ODP tonnes for that year. Accordingly, the Secretariat considers that the level of consumption of MB for Argentina in 2019 was zero, as the maximum level specified in the Agreement, except for any CUEs approved by the Parties.

Secretariat's recommendation

147. The Executive Committee may wish to note that the reported level of consumption of methyl bromide for Argentina in 2019 was zero, as per the Agreement between the Government and the Executive Committee, except for the critical-use exemptions approved by the Parties to the Montreal Protocol.

Request for extension of enabling activities (UNEP)

148. In line with decision 81/32(a),³⁰ on behalf of the Government of the Syrian Arab Republic, UNEP has submitted an official request for extension of enabling activities for the phase-down of HFCs, from 31 December 2020 to 31 December 2021.

Secretariat's comments

149. The main reason for the extension is to complete planned activities which were delayed primarily because of the constraints imposed by the COVID-19 pandemic. The Secretariat noted that the Government of the Syrian Arab Republic is aware that enabling activities should be completed no later than the extended period being requested, and balances should be returned once the activities have been completed.

Recommendation

150. The Executive Committee may wish:

- (a) To note the request for extension of enabling activities for HFC phase-down submitted by the Government of the Syrian Arab Republic contained in document UNEP/OzL.Pro/ExCom/86/21; and
- (b) To extend the completion date of the enabling activities for HFC phase-down for the Syrian Arab Republic to 31 December 2021, on the understanding that no further extension would be requested and that UNEP would submit, within six months of the project completion date, a final report of the enabling activities completed in line with decision 81/32(b).

SECTION II: REPORTS ON PROJECTS WITH SPECIFIC REPORTING REQUIREMENTS FOR INDIVIDUAL CONSIDERATION

Reports related to HPMPs

³⁰ The Committee decided to maintain the 18-month implementation period for enabling activities and, if needed, to extend that period by no more than 12 months (totalling 30 months from project approval), when an official request for extension was received by the Secretariat.

Democratic People's Republic of Korea: HCFC phase-out management plan (stage I – progress report on implementation of activities) (UNIDO)

Background

151. At its 73rd meeting, the Executive Committee approved, in principle, stage I of the HPMP for the Democratic People's Republic of Korea, with UNIDO as lead implementing agency and UNEP as cooperating implementing agency, to achieve a reduction of HCFC consumption to a sustained level of 66.30 ODP tonnes by 1 January 2018 (i.e., 15 per cent below the HCFC baseline for compliance of 78.00 ODP tonnes). The approval took place upon confirmation by the implementing agencies that stage I of the HPMP could be implemented in compliance with the resolutions of the UNSC³¹ on the Democratic People's Republic of Korea.

152. Since the approval of stage I, the Executive Committee has approved three out of four funding tranches at a total level of US \$808,550 (i.e., 95.3 per cent of the total funds of US \$848,550 approved in principle), as well as the transfer to UNIDO of all phase-out activities to be implemented by UNEP. In line with the Agreement between the Government and the Executive Committee, the last tranche of stage I of the HPMP, in the amount of US \$40,000, was scheduled to be submitted at the 81st meeting. As of the 84th meeting, UNIDO had been unable to submit the tranche request, due to the UNSC resolutions.

Progress report

153. UNIDO has submitted to the 85th meeting a progress report on the implementation of stage I of the HPMP, listing the activities implemented so far, the level of disbursement achieved, the challenges encountered to continue the implementation of activities in compliance with the UNSC resolutions, and a request for guidance from the Executive Committee.

154. The report indicates that despite difficulties resulting from the UNSC resolutions, the main activities performed during the first and second tranches included:

- (a) Procurement of three refrigerant identifiers for the country's customs office;
- (b) Purchase of one spray foaming machine for the Puhung Building Material factory upon clearance from the UNSC Committee in 2015 and preparation of a contract for and shipment of auxiliary equipment to enable the installation/commissioning of spray foaming equipment;
- (c) Procurement of PU foam equipment (methyl formate) cleared by the UNSC Committee in line with the procedures established in the UNSC Resolution 2270 (2016); a purchase contract to the equipment suppliers was issued; the equipment was shipped through China, as it could not be shipped directly to the Democratic People's Republic of Korea, but was rejected by the Customs authorities in China and returned to the supplier;
- (d) Procurement of training equipment for refrigeration and air-conditioning (RAC) servicing technicians upon clearance by the UNSC Committee, shipped and distributed to refrigeration service technicians in June 2016;
- (e) Organization of a train-the-trainers workshop for 35 RAC servicing technicians conducted in August and September 2016;

³¹ The UN Security Council Committee established pursuant to Resolution 1718 was consulted before submission of stage I of the HPMP to establish whether the equipment or any other services under the HPMP could be provided to the country.

- (f) Completion of an additional training session for five trainers in best practices in RAC servicing, conducted in India in December 2016; and
- (g) Conducting the first train-the-trainers workshop for 40 customs officers in May 2017.

Level of fund disbursement

155. As at 30 March 2020, of the total amount of US \$808,550 of funds approved, US \$303,313 (36 per cent) had been disbursed, as shown in Table 9.

Table 9. Financial report of stage I of the HPMP for the Democratic People’s Republic of Korea (US \$)

Tranche	Approved	Disbursed	Disbursement rate (%)
First	134,003	87,386	65.2
Second	506,680	211,110	41.7
Third	167,867	1,817	1.1
Total	808,550	300,313	36.0

Update on the implementation plan for stage I of the HPMP

156. The activities that have not yet implemented include:

- (a) Follow-up on the training workshops for RAC servicing technicians and customs officers;
- (b) Mapping of existing reclaim and recovery centres and procurement of additional equipment; and
- (c) Establishing the project management unit once the funding transfer channel has been approved and made operational.

157. In addition, the PU foam equipment that was returned to the supplier by the Customs authorities in China, could not be re-imported as an additional resolution 2397 issued in 2017 specifically prohibits “all industrial machinery (HS codes 84 and 85), transportation vehicles (HS codes 86 through 89), and iron, steel, and other metals (HS codes 72 through 83)”. Subsequent to this resolution, UNIDO was advised to submit to the UNSC a new exemption request, together with an updated list of the equipment to be imported into the country. UNIDO submitted an official exemption request on 8 May 2019 and the UNSC Committee denied the exemption on 18 June 2019. In view of the above, UNIDO has not been able to proceed with the delivery of equipment.

158. Non-investment activities have also been impacted due to the inability to transfer funds within the country, made even more difficult by the introduction of stricter sanctions following the adoption of resolution 2397 (2017).

159. In view of the above, UNIDO indicated in its report that it is not in a position to continue the implementation of the HPMP for the Democratic People’s Republic of Korea and is requesting guidance from the Executive Committee.

Secretariat’s comments

160. The Secretariat notes that UNIDO has continued exercising due diligence and monitoring throughout the implementation of the project. Upon the adoption of an additional UNSC resolution in 2017, it has submitted to the UNSC Committee pursuant to resolution 1718 an exemption request, together with an updated list of the equipment to be imported into the country, and has remained in close cooperation

with relevant UN member states regarding the procurement and export of equipment designed to phase out the use of controlled substances in the country.

Recommendation

161. The Executive Committee may wish to consider the information on the implementation of activities under stage I of the HCFC phase-out management plan (HPMP) for the Democratic People's Republic of Korea, submitted by UNIDO.

Annex I

TEXT TO BE INCLUDED IN THE UPDATED AGREEMENT BETWEEN THE GOVERNMENT OF LIBYA 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)

1. This Agreement represents the understanding of the Government of Libya (the “Country”) and the Executive Committee with respect to the reduction of controlled use of the ozone-depleting substances (ODS) set out in Appendix 1-A (“The Substances”) to a sustained level of **76.95** ODP tonnes by 1 January **2020** in compliance with Montreal Protocol schedules.

16. This updated Agreement supersedes the Agreement reached between the Government of Libya and the Executive Committee at the 75th meeting of the Executive Committee.

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2015	2016	2017	2018	2019	2020	2021	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	106.54	106.54	106.54	106.54	106.54	76.95	76.95	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	122.30	118.40	118.40	106.54	106.54	76.95	76.95	n/a
2.1	Lead IA (UNIDO) agreed funding (US \$)	1,717,950	0	0	190,893				1,908,843
2.2	Support costs for Lead IA (US \$)	120,257	0	0	13,362				133,619
3.1	Total agreed funding (US \$)	1,717,950	0	0	190,893				1,908,843
3.2	Total support costs (US \$)	120,257	0	0	13,362				133,619
3.3	Total agreed costs (US \$)	1,838,207	0	0	204,255				2,042,462
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)								2.67
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)								0.00
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)								79.85
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)								23.84
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)								0.00
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)								7.30



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Final Report

**Pilot Demonstration Project on ODS Waste Management and
Disposal in Lebanon**

LEB/DES/73/DEM/83

Presented to the
85th Meeting of the Executive Committee
of the Multilateral Fund for the Implementation
of the Montreal Protocol

July 2020

Table of Contents

Executive Summary	3
I. Background Information.....	4
II. Project Objective and Components	5
III. Activities and Achievements.....	6
Component 1: Aggregation of ODS at the National Level	6
Component 2: Transportation of ODS Waste	6
Component 3: Strategy for ODS Export and Destruction.....	8
Component 4: Awareness Raising, Training and Project Monitoring.....	9
IV. Cost Considerations and Financial Status	10
V. Lessons Learned and Recommendations.....	11
ANNEXES	12
Annex 1: Abbreviations and Acronyms.....	13

Executive Summary

The project “Pilot Demonstration Project on ODS Waste Management and Disposal” was submitted by UNIDO, as implementing agency, on behalf of the Governments of Lebanon. It was approved in November 2014 at the 73rd Meeting of the Executive Committee (ExCom) of the Multilateral Fund of the Montreal Protocol, at the funding level of USD 123,475 (excluding Agency Support Costs (ASC)). Thus, the overall expenditure of the project is USD 115,774.

The objective of the project was to develop a sustainable strategy to destroy stocks of unwanted Ozone Depleting Substances (ODS) in Lebanon. The original strategy looked into the establishment of local destruction capacity for the disposal of ODS waste and other chemical waste in Lebanon, which can be used by other countries in the region. In response to the decision of the 72nd meeting of ExCom of the Multilateral Fund an alternate strategy that looks into the feasibility of exporting ODS for destruction was developed. The project activities are divided into four components:

- Component 1: Quality testing and aggregation of ODS waste at national level
- Component 2: Transportation of ODS waste
- Component 3: Strategy for export and destruction
- Component 4: Awareness raising, training and project monitoring

The project proposal aimed at the safe, environmentally sound and efficient destruction of 14.54 metric tonnes (MT) of ODS waste in Lebanon. The waste collected within the project included mainly ozone depleting Chlorofluorocarbons (CFCs).

In total, 12.74 MT of CFCs including 3.70 MT halon of ODS waste were identified during the project PRP stage as presented in the table below:

Group of ODS	Quantity of ODS waste (MT)
CFC-11	2.07
CFC-12	10.59
CFC-500	0.01
CFC-502	0.07
Halon	3.70
Total	16.44

Table 1: Quantities of CFCs and Halon identified in Lebanon

The project collected all the ODS stocks that were identified including provision of cylinders as well as identifying an interim-storage facility of CFCs and halons. The project raised awareness of ODS waste management and developed a strategy to destroy CFCs and halon stocks identified in Lebanon. The overall cost effectiveness as per the project document approved for the destruction of CFCs is 9.69 USD/kg taking into account all activities related to the project components 1-4. The project did not achieve its initial goal as a result of the high costs associated with the export and destruction of the collected ODS wastes. Although Lebanon is implementing various programmes on Persistent Organic Pollutants (POPs) management in the framework of its obligations under the Stockholm Convention, finding synergies with POPs destruction were not possible, due to obstacles in both legislation and institutional arrangements of the beneficiary country.

I. Background Information

The 58th meeting of the ExCom of the Multilateral Fund approved a set of interim guidelines for the funding of demonstration projects for the disposal of ODS in accordance with paragraph 2 of Decision XX/7 of the Meeting of the Parties. The project “Pilot demonstration project on ODS waste management and disposal” was submitted jointly by UNIDO, as lead agency, on behalf of the Governments of Lebanon. It was approved at the 73rd meeting of the ExCom of the Multilateral Fund in November 2014 (UNEP/OzL.Pro/ExCom/73/62, Decision 73/55), at the funding level of USD 134,588 including ASC.

The Government of Lebanon is in the possession of a substantial amount of unwanted ODS which need to be destroyed. There is potential for future stocks of unwanted ODS, in particular CFCs from end-of-life recovery of still existing larger, still operating CFC installations, and Hydrochlorofluorocarbons (HCFCs) with future gradual phase-out of the different HCFCs in Lebanon.

The project aims at environmentally sound destruction of 16.44 metric tonnes (MT) of ODS waste planned to be collected from various sectors in Lebanon. In addition, a strategy will be formulated focusing on the destruction of the 3.70 metric tonnes of unwanted Halon stocks to be collected. The waste to be collected that were identified during the preparation stage of the project and the survey done in the year 2012 included mainly ozone depleting CFCs is shown in the table below:

Sector	CFC-12/kg	CFC-11/kg	R-502/kg	R-500/kg	Halon/kg	Total/kg
Service workshops	2570.4	1250	40.8	0	0	3861.2
Training centers	734.4	0	0	0	0	734.4
Hotels	231.2	0	27.2	13.6	0	272.0
Hospitals	299.2	0	0	0	0	299.2
Malls and supermarkets	13.6	0	0	0	0	13.6
Cold rooms	1196.8	0	0	0	0	1196.8
Importers	5540	816	0	0	0	6356.0
Lebanese Army	0	0	0	0	369.5	369.5
TOTAL	10,585.6	2066.0	68.0	13.6	369.5	16,428.2

Table 2: Estimated quantities (Identified) of CFC and Halon Stocks for Disposal in Lebanon

The implementation of this project will contribute to the long-term sustainability of ODS destruction activities in Lebanon from a variety of angles including enforcing legislation addressing ODS disposal; creating the adequate enabling environment to enforce the obligation to destroy ODS waste; ensuring a cooperative environment in the setting up of an ODS disposal infrastructure in the country; and encouraging owners of ODS stocks to co-finance ODS destruction activities in the country upon completion of this project.

II. Project Objective and Components

The objective of the project is to develop a sustainable strategy to destroy stocks of unwanted ODS in Lebanon. The original strategy submitted at the 72nd meeting of the ExCom of the Multilateral Fund looked into the establishment of local destruction capacity for the disposal of ODS waste and other chemical waste in Lebanon, which can be used by other countries in the region. However, in response to the decision of the 72nd meeting of the ExCom of the Multilateral Fund, an alternate strategy that looks into the feasibility of exporting ODS for destruction abroad was considered.

The project recognized cement kilns as destruction facilities. However, while technically possible, the commitment of the kilns and regulatory issues make this technical possibility difficult to implement. Hence, the project intends to export the ODS to be destroyed. Should the difficulties related to the commitment of kilns and regulatory issues be resolved during the start-up phase of the project implementation, the project could be implemented by establishing and using national destruction facilities without additional cost to the Executive Committee. In doing so, the project will develop the appropriate technical and human resources capacity for ODS waste management at country level, including aggregation, storage and disposal.

The project activities were divided into four components:

Component 1: Quality testing and aggregation of ODS waste at national level, including identification and selection of facilities to collect national ODS waste stocks, provision of storage equipment (ISO cylinders), technical assistance for the analysis of the composition of the ODS waste stocks, and preparation of required documentation.

Component 2: Transportation of ODS waste including the assessment of the optimal means for transport of the ODS waste from the facility in Beirut to a destruction facility abroad.

Component 3: Determine feasible options for the destruction of halons and develop strategy for destruction abroad including the assessment of the optimal means of destruction of the ODS waste to a facility within the European Union (EU) or United States of America as Lebanon does not have ODS destruction facilities, taking into account requirements of the Basel Convention.

Component 4: Awareness raising, training and project monitoring. In order to ensure that the ODS waste collected and disposed of is properly accounted for, the process was closely monitored and data was recorded.

A total of 2.5 Metric Tons of Halon-1211, 400 kg of R-11 and 325 kg of R-12 waste has been collected. The results achieved thus far for project components 1, 2, 3 and 4 are described in the following sections.

III. Activities and Achievements

Component 1: Aggregation of ODS at the National Level

Collection and aggregation of ODS waste was performed on the national level taking into account all the sectors.

- 1) **Collection and Aggregation:** The first step was to contact Refrigeration and Air-Conditioning (RAC) servicing companies, national training centers, large end-users such as government agencies including the Lebanese Army, importers and waste management companies to collect information about the quantities of ODS waste that had been identified in the country. The National Ozone Unit (NOU) consulted services technicians and managers of the identified collection centers. The identified waste included mainly ozone depleting CFCs. The table below highlights the quantities of ODS waste and non-ODS waste identified, taking into account the results of the chemical analysis of the waste mixtures. It is important to note that the quantities identified were kept in the storage facilities of the end-users due to the limited resources at the NOU for storage of those wastes.

	Quantity of identified waste (MT)	Quantity of identified ODS waste (MT)	Quantity identified of non-ODS waste (MT)
Total:	41.37	32.79	8.58

Table 3: Quantities of ODS and non-ODS waste identified.

- 2) **Chemical Analysis:** Chemical composition and analysis of collected ODS waste mixtures was important step to determine the quantity of ODS waste that will be destroyed under the pilot project and to reduce the destruction costs. Cost estimates provided by eligible destruction facilities indicated 25-30% higher costs for destruction of waste mixtures without chemical analysis of their composition. However; the NOU made contacts with different destruction facilities worldwide and the offer for the destruction of ODSs from TREVERIA Environment-France, at a cost of US\$ 149,060.00 for the environmental disposal of the stocks collected of R-11 and R- 12 waste and Halon-1211.

The project selected the certified laboratory for composition analysis of the waste mixtures collected. It was using gas chromatography and aware of the analytical methods and standards to perform this type of analysis.

The project collected all the ODS waste taking in consideration the quality of the ODS waste as well as all the identified sectors. The quantity of ODS waste identified is 41.37 and the collected amounts to 3.225 tons.

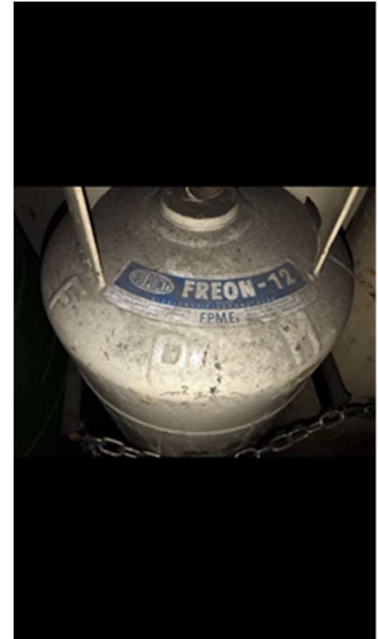
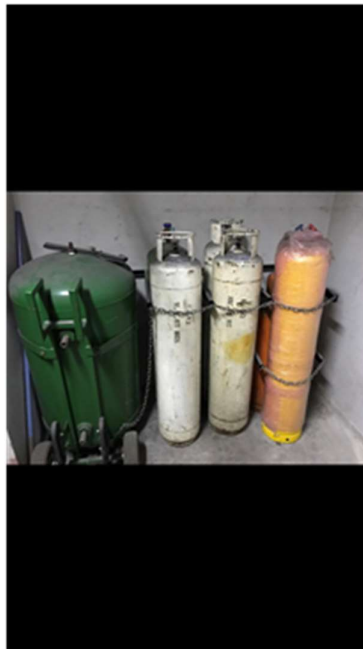
Component 2: Transportation of ODS Waste

- 1) **Selection of Interim Storage Facility:** The project recognized cement kilns as destruction facilities. However, while technically possible, the commitment of the kilns and regulatory issues made this technical possibility difficult to implement. To this, the project identified a storage facility at the outskirts of Beirut. The collected stocks of ODS waste were tested once more for purity at the storage facility before loading.

Approaches to transport the collected ODS waste to the destruction facility were explored to include identifying local owners of other types of hazardous wastes, such as persistent organic pollutants (POPs) that would be willing to co-transport their wastes with the aggregated waste from the project, safely transporting the waste quantities to the destruction facility, etc. Nonetheless, finding synergies with POPs destruction were not possible, due to obstacles in both legislation and institutional arrangements in Lebanon.

- 2) **Supply of Cylinders and Tools:** This activity was implemented in cooperation with selected stakeholders. The project recruited a national consultant to coordinate transport of cylinders (of approx. 70 companies) to aggregation point in Beirut. The collected cylinders containing Halons, R-12 and two drums of R-11 were stored at a facility arranged by the NOU

Prior to the use, the cylinders were inspected and certified. The cylinders were weighed and recorded accordingly. The cylinders were then stored in the waste storage facility pending export and destruction.



Photos 1-5: Sample photos of ODS waste collected and the interim storage facility.

The project successfully procured all the necessary cylinders and tools for the collection of all the ODS waste. Interim storage facilities have been identified until the export of the ODS waste is commissioned and carried out.

Component 3: Strategy for ODS Export and Destruction

NOU and main stakeholders were involved in this design and the development of the destruction strategy.

- 1) **Selection of Destruction Facility:** There are no destruction facilities in Lebanon. For that reason, appropriate destruction facilities had to be identified abroad. European Union (EU) countries were considered due to their geographical proximity but also because of type of destruction technologies and the level of emission control. The criteria for selecting eligible destruction facilities were defined based on the list of approved destruction technologies as prepared by the Technical and Economic Assessment Panel (TEAP) and the list of approved destruction technologies in the EU (Annex VII of EC/1005/2009¹ on Substances that Deplete the Ozone Layer). Several licensed facilities in 13 EU countries were identified that met the defined criteria.

The strategy for ODS waste export and destruction was developed together with the NOU and main stakeholders in October 2016 followed by a series of meetings with technical experts and ministry officials. The strategy built on existing national and international policies and regulations for ODS waste management. The strategy took into consideration that in Germany, Czech Republic, United Kingdom and Australia, the use of halons is banned in all non-critical uses, while the United States and Japan allow its use in existing systems. Many countries have established central halon banks, where halon is purified and stored for critical use or destruction. Critical uses are generally closely monitored in order to prevent misuse. The project identified the United States as the potential destruction facility due to the regulatory approaches in the use of ODS for critical use.

- 2) **Destruction of ODS Waste Abroad:** NOU issued a call for proposals for potential destruction facilities. In total, 3 responses were received and evaluated in 2018. During the evaluation process it was realized that the amount quoted superseded the available project funds as already mention in Component 1 (2). As such, UNIDO engaged A-Gas International and offered to destruct the CFC-12 and recycle the Halon 1211 for “critical use” but due to the shortage in funds available no actions were taken. The positive effect of recycling of ODS for critical use include reduced emissions because there are no landfills and no venting of the gases into the atmosphere. Moreover, it also contributes to increased resource management due to the consistent quality and predictable supplies of Halon 1211 on the local market.

The process for preparing export and import permits as well as non-objection notices for the destruction of CFC-12 and recycling of Halon 1211 was initiated. An updated inventory of the ODS and CFC-12 was carried out confirming cylinder serial numbers, gas weight as well as the source of the gases.

¹ Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on Substances that Deplete the Ozone Layer

On-going project implementation was slightly hampered due to the unexpected turn of events because of the political crisis in October 2019. As a result, the NOU put on hold all communication and correspondence with UNIDO and A-Gas International until the political situation in the country was resolved.

The project developed and implemented an ODS waste destruction strategy. Licensed facilities were identified and a call for proposals was issued. Based on the bidding procedure, all the potential bidders quoted prices that are higher than the available project funds. A-Gas International presented an offer based on the understanding that CFC-12 will be destructed and Halons 1211 will be stored in existing halon banks for critical use.

Component 4: Awareness Raising, Training and Project Monitoring.

National workshops were organized in Tripoli and Beirut attracting government stakeholders as well as technical experts within the RAC sector.

- 1) **National Training Workshop on Aggregation of ODS Waste:** One national training workshops on aggregation of ODS stocks for destruction and improvements was organized in Tripoli, Lebanon in March 2015. The main objective was to disseminate experiences with the operational collection and aggregation system in other countries within the region, and to assist Lebanon to enhance the collection of ODS waste during the project life and beyond. The main topics discussed included review of Lebanon's ODS legislation with respect to the disposal of ODS; analysis of how regulatory measures in Lebanon could strengthen the sustainable management of refrigerants and ODS waste; analysis of how regulatory measures could enhance the operation of national ODS waste management schemes in line with Montreal Protocol provisions; and explaining the key steps for implementation of disposal activities in Lebanon including data survey, laboratory analysis, training activities, aggregation, transportation, verification, destruction and monitoring. The outcomes of the workshop included commitment to ODS waste aggregation and proper storage; and commitment to introduce environmental fees for the import of ODS. Participants that attended the workshop included government representatives, national experts on ODS management, end-users and other relevant stakeholders.
- 2) **National Training Workshop on ODS Waste Management:** National training workshop on ODSs waste management was organized in Beirut, Lebanon in December of 2015. The main goal was to build the capacity of major stakeholders involved in ODS waste management and to discuss the key steps to implement disposal activities in Lebanon including the data survey, laboratory analysis, training activities, aggregation, transportation, verification, destruction, and monitoring. Participants that attended the workshop included the NOU, government representatives, national experts on ODS management, end-users and other relevant stakeholders.

The project conducted two training workshops and capacitated 42 participants on ODS waste aggregation, data survey, laboratory analysis, transportation, verification, monitoring and destruction.

IV. Cost Considerations and Financial Status

The pilot demonstration project on ODS-waste management and disposal for Lebanon was approved at a funding level of US \$134,588 plus ASC. The cost of the project was calculated at US \$11.6/kg which is lower than the threshold of US \$13.2/kg provided for in decision 58/19. The residual balance upon financial completion of the project will be returned to the Multilateral Fund.

The pilot demonstration project on ODS-waste management and disposal for Lebanon aimed to demonstrate the safe, environmentally sound and efficient disposal of 12.73 metric tonnes of ODSs waste identified in different locations in Lebanon. However, The actual amount of ODS waste collected is 3,225 metric tonnes (MT) of CFC-11 and R-12 as well Halon-1211. The destruction of the collected quantities of ODS waste is contingent on the availability of funds. Therefore, due to the expenditures so far on the different project implementation activities (US\$ 115,774.00), the remaining funds available (US\$ 7,701.00) will not be sufficient to cover the cost of the shipping of the waste and destruction at a facility in France (Cost offered: US\$ 169,060.00).

The actual total cost of the project is US\$ 115,774.

Budget	Obligations + Expenditure	Funds Available
123,475	115,774	7,701

V. Lessons Learned and Recommendations

During the implementation process of the project, it was evident that when collecting the waste the numbers/quantities differ from the figures/quantities during the survey and identification of the waste in the different site. The reasons for that as advised by several enterprises is they do not know what to do with that waste and they just dumped them or released in the atmosphere due to the age of the cylinders as they are in bad conditions.

The other findings we encountered during the implementation process of the project, is the cost of destruction/recycling. We recommend that each country should have an existing facility to do the job otherwise the high cost of shipping and destruction/recycling will offset the project implementation due to the high in cost of implementation.

Halon wastes are more readily available but unfortunately, there appears to be little demand for recycled halons within the country as well so these wastes will continue to build up. The concept of halons for critical use should be mainstreamed in the RAC sector as well as in the relevant industries. Moreover, national policy on ODS waste management should factor in the benefits of recycling ODS for critical use that include reduced emissions because there are no landfills and no venting of the gases into the atmosphere. Moreover, it also contributes to increased resource management due to the consistent quality and predictable supplies of halons on the local market.

It is paramount that Lebanon mobilizes funding to build capacity for ODS destruction to be done locally as neighbouring countries with small amounts of waste stocks indicated interest in the outcome of the project so that they can have a nearby destination for their wastes. This is cost effective since no export and destruction of ODS waste abroad is necessary.

The high cost of incineration is an obstacle for the destruction of unwanted ODS waste. It is recommended that the government to review possibility of establishing special funding to encourage ODS wastes destruction. This type of funding could be sourced from the MLF as well as ODS producers.

ANNEXES

Annex 1: Abbreviations and Acronyms

ASC	Agency Support Costs
CFC	Chlorofluorocarbon
ExCom	Executive Committee
HCFC	Hydrochlorofluorocarbon
MT	Metric Tonnes
NOU	National Ozone Unit
ODS	Ozone Depleting Substances
RAC	Refrigeration and Air-Conditioning