



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/95/12
24 October 2024

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-fifth Meeting
Montreal, 4–8 December 2024
Item 6(d) of the provisional agenda¹

**TERMS OF REFERENCE FOR THE DESK STUDY FOR THE EVALUATION OF THE
RECOVERY, RECYCLING AND RECLAMATION PROJECTS**

Introduction

1. At its 93rd meeting, the Executive Committee approved the monitoring and evaluation work programme for 2024 and 2025² (decision 93/10) which included the preparation of the terms of reference (TORs) for a desk study for the evaluation of projects involving recovery, recycling and reclamation (RRR). The TORs would be considered at the 95th meeting for the desk study evaluation to be launched in 2025.³
2. In response to the decision, the Senior Monitoring and Evaluation Officer (SMEO) has prepared the present document for the consideration of the Executive Committee, following consultations with the Secretariat and the bilateral and implementing agencies.
3. The definition of RRR within the Montreal Protocol was set by decision IV/24 of the Meeting of the Parties, as follows:

“Recovery: The collection and storage of controlled substances from machinery, equipment, containment vessels, etc., during servicing or prior to disposal;

Recycling: The re-use of a recovered controlled substance following a basic cleaning process such as filtering and drying. For refrigerants, recycling normally involves recharge back into equipment and it often occurs ‘on site’;

¹ UNEP/OzL.Pro/ExCom/95/1

² UNEP/OzL.Pro/ExCom/93/13/Rev.1

³ UNEP/OzL.Pro/ExCom/93/13/Rev.1, annex I

Reclamation: The re-processing and upgrading of a recovered controlled substance through such mechanisms as filtering, drying, distillation and chemical treatment in order to restore the substance to a specified standard of performance. It often involves processing 'off site' at a central facility".

4. As defined in the monitoring and evaluation work programme for 2024 and 2025, “the evaluation would aim at assessing the use of the infrastructure established in Article 5 countries for recovering, recycling and, where applicable, reclaiming of controlled substances and that infrastructure’s contribution to the reduction in their consumption”.⁴

5. The proposed desk study for this evaluation would cover the multi-year-agreement (MYA) projects with a focus on the refrigeration and air-conditioning (RAC) servicing sector. Since its early days, the Multilateral Fund has supported projects involving one or more of the three processes of RRR, covering a variety of substances, *inter alia* CFCs, halons and methyl bromide,⁵ and more recently HCFCs and HFCs.⁶ The method used to prepare this evaluation could be replicated in the future for similar evaluations of other sectors and substances, such as firefighting,⁷ if so requested.

Rationale for the desk study

6. Projects involving RRR and life-cycle management of refrigerants are of critical importance to achieve the objectives of the Montreal Protocol; they represent a significant part of the funded activities implemented in the Article 5 countries. These projects, including investment activities and associated training and capacity building, contribute to sustainable reduction of consumption and avoidance of emissions of controlled substances.

7. The issue of RRR has been addressed in past evaluations which are listed in the annex I to the present document. The first dedicated evaluation on the matter was a desk study on recovery and recycling (R&R) projects presented at the 31st meeting.⁸ Since then, the issue has been examined as a component of other thematic evaluations, in particular on the RAC servicing sector. These evaluations have led the Executive Committee to adopt a number of decisions⁹ on different aspects of RRR, containing requests to the different stakeholders, such as the bilateral and implementing agencies and the national ozone units.

Objective

8. The objective of the desk study is to pave the way towards a future second-phase evaluation, which would cover those issues for which a desk study would not be sufficient. The evaluation questions listed in annex II to the present document will frame the analysis with the purpose of identifying the key challenges that arise during the implementation of projects related to RRR, as applicable.

9. The findings of the desk study will provide the basis for a second phase of the evaluation which would include country visits, to learn good practices from success stories, to identify patterns for replication, and to learn from the challenges in project implementation. The final report of the desk study should present an annex with updated terms of reference for the second phase, based on the findings of the

⁴ UNEP/OzL.Pro/ExCom/93/13/Rev.1, paragraph 19.

⁵ The early substances have now been phased-out with limited consumption confined to specific sectors that could be covered separately through ad hoc case studies.

⁶ This list includes blends.

⁷ Addressing Halons and HCFC-123.

⁸ UNEP/OzL.Pro/ExCom/31/18

⁹ To name a few, decisions 41/100, 49/6 and 58/6

first phase. This could include a budget adjustment depending on the number of missions and consultant(s) envisaged to complete the evaluation.

Scope

10. The scope of the desk study will cover, inter alia, a number of areas regarding the implementation of RRR projects, their achievements, effectiveness, and contribution to compliance with the Montreal Protocol. The desk study will consider MYA projects from 2010 to 2023, in particular those of HCFC phase-out management plans (HPMPs) that include at least one of the three components of recovery, recycling (and re-use) and reclamation in servicing in the RAC sector including domestic and commercial/industrial refrigeration, and residential and commercial air-conditioning subsectors. The desk study will review a sample of projects, in both low-volume-consuming (LVC) and non-LVC countries.

11. The desk study will consider relevant information from the chapter¹⁰ devoted to the issue in the Technology and Economic Assessment Panel (TEAP) report on life-cycle refrigerant management¹¹ and take into account the findings of the report, using terminology and classification consistent with the panel's findings. The study will also include the areas of interest discussed during the Inter-Agency Coordination Meeting (IACM) held from 10 to 12 September 2024 in Montreal¹² and take into account the output of the workshop on life-cycle refrigerant management¹³ scheduled on 27 October 2024 in the context of the Thirty-Sixth Meeting of the Parties to be held in Bangkok.

12. While projects that addressed reclamation also included R&R, not all R&R projects also included reclamation given, inter alia, the need for additional infrastructure requirements. The scope of the desk study will cover all aspects of RRR, while devoting a specific chapter solely to reclamation. Overall results would be presented in an analytical framework covering all three components.

13. The desk study should also identify a sample for the reclamation issue to be covered, identifying countries with reclamation centres and facilities and providing the rationale for the different case studies to be included in the second phase. The role of R&R networks should also be covered, proposing case studies in countries where such networks have been operationalized effectively.

Evaluation questions

14. The desk study will explore and analyze issues related to data collection methodologies and difficulties in reporting, particularly on blends; the development of legislative frameworks to support RRR; the role of customs in the enforcement of legislation and transboundary controls; incentive schemes; market factors (e.g. for the competitiveness of RRR); technological constraints related to equipment; scalability factors; training; and capacity building for handling alternatives in all relevant sectors.

15. The evaluation should cover, inter alia, the evaluation questions as listed in annex II, which are an integral part of these terms of reference. Some of these questions could be fully answered in the first phase through the desk study, others may require further analysis to be developed during the second phase, involving field visits, to validate and refine the preliminary findings.

Methodology

16. The desk study should include an in-depth review of the existing documentation such as project documents, progress reports, verification and project completion reports, reports on projects with specific requirements, evaluation reports when applicable, ODS alternative surveys, as well as information gathered

¹⁰ Chapter 3 on recovery, recycling and reclamation.

¹¹ TEAP May 2024: Decision XXXV/11 Task force report on life cycle refrigerant management ([volume 3](#)).

¹² MLF/IACM.2024/2/2

¹³ See concept note UNEP/OzL.Pro/Workshop.13/1.

from interviews and discussions with members of the Secretariat and bilateral and implementing agencies, as well as regional and local stakeholders (e.g., regional coordinators of the ozone networks and national ozone officers).

17. An internal preliminary research phase will rely on the internal work of the evaluation unit, to constitute the research package¹⁴ to be provided to the consultant as the starting point for the preparation of the desk study. This information would be collected with the collaboration of the Secretariat and the implementing and bilateral agencies. Additional information will enrich the desk study through remote/online interviews (or in-person interviews when feasible) and targeted questionnaires and surveys sent to relevant stakeholders. This preparatory phase will precede the recruitment of the consultant.

18. The consultant will work under the guidance of the SMEO and report on progress at interim milestones; the Secretariat and the agencies will be consulted at various stages as technical advisors to ensure full understanding and proper analysis of the issues at stake. As per standard evaluation practices, the consultant should consider their views and integrate their comments during the consultative process for the preparation and finalization of the desk study, prior to its presentation to the Executive Committee. All the supportive evidence collected by the consultant should be part of the final outputs submitted to the evaluation unit.¹⁵

19. The analysis should combine both quantitative and qualitative methods. The consultant should make explicit the methodology and assumptions underlying the proposed mission plan and the groups of countries and cases to be evaluated in the second phase. The SMEO would supervise the work of the consultant in close cooperation with the Secretariat for technical advice for quality assurance of the final desk study report and validation of the proposed plan.

Budget

20. A budget of US \$50,000 was approved at the 93rd meeting for the entire evaluation included in the monitoring and evaluation work programme for 2024 and 2025.¹⁶ The cost distribution between the first and second phase would depend on the level of expertise of the consultant(s), and the travel requirements for field missions. In considering the proposed costed plan for the second phase of the evaluation to be presented as part of the updated terms of reference in annex of the desk study, the Executive Committee could consider adjusting the initial budget request, if deemed necessary for the comprehensiveness of the evaluation.

Expected result

21. The ultimate objective of the evaluation is to review the contribution of RRR-related activities in supporting compliance with the Montreal Protocol; to identify challenges and measures to address those challenges, and to collect lessons learned that can be used for ongoing and future projects involving similar activities.

22. The desk study will serve as a mind-mapping of key issues to be analyzed in depth in the second phase of the evaluation, proposing a detailed and costed evaluation plan which would identify the potential

¹⁴ For example, relevant information and data collected from internal project-related documentation and the inventory of approved projects database, as well as relevant decisions of the Executive Committee including those resulting from past evaluations.

¹⁵ This includes questionnaires, interview guides, minutes of meetings and any supportive evidence collected during the preparation of the desk study by the consultant.

¹⁶ See UNEP/OzL.Pro/ExCom/93/13/Rev.1, table 3, proposal 1.

countries to be visited and to which extent the field work would contribute to answering the evaluation questions as approved in the TORs.

23. As a result of the desk study, the proposed plan for field missions should cover a diverse group of countries to ensure a comprehensive evaluation. The proposed sample would ensure visits to reclamation centres; would cover countries with R&R networks; and would help answer the evaluation questions identified in the desk study requiring direct observation in the countries. The results of the desk study should provide a solid basis for the undertaking of the second phase, with a clear rationale for the recommendations emanating from the first phase and with a defined scope of what is to be addressed in the second phase.

24. The expected outputs would be delivered in two phases, with the desk study resulting from the first phase, and the final evaluation being presented at a later stage, presenting the overall consolidated findings and recommendations. The desk study would propose the updated terms of reference at the 97th meeting, for the second phase to be implemented during 2026. A final evaluation report would consolidate and summarize the findings of the two phases of the evaluation and present a number of recommendations to better assist Article 5 countries in achieving compliance with Montreal Protocol targets, with the support of the bilateral and implementing agencies. The field case studies could be presented as annexes to the main final evaluation reports, which would be informed by their results.

25. The timeline for the overall evaluation, including the first and second phases, will depend on the final scope approved by the Executive Committee. The first phase of the desk study is planned to be presented at the 97th meeting.¹⁷ The second phase could require more time than the desk study, as it would involve field visits assisted by expert teams with the required experience and necessary understanding of Montreal Protocol issues to substantiate the findings, lessons learned and recommendations of a meaningful and relevant evaluation. The recommendations should be specific, measurable, attainable and time-bound, to facilitate the tracking of their implementation, as well as the SMEO's future reporting on progress made.

Recommendation

26. The Executive Committee may wish to approve the terms of reference for the desk study for the evaluation of recovery, recycling and reclamation projects as contained in document UNEP/OzL.Pro/ExCom/95/12.

¹⁷ UNEP/OzL.Pro/ExCom/93/13/Rev.1, annex I

Annex I

PAST EVALUATION OUTPUTS RELEVANT TO THE EVALUATION OF RECOVERY, RECYCLING (RE-USE) AND RECLAMATION PROJECTS

Reference	Title
UNEP/OzL.Pro/ExCom/88/10	Desk study for the evaluation of energy efficiency in the servicing sector
UNEP/OzL.Pro/ExCom/84/11 and Corr.1	Final report on the evaluation of the pilot demonstration projects on ODS disposal and destruction
UNEP/OzL.Pro/ExCom/82/21	Synthesis report on the pilot ODS disposal projects (decisions 79/18(e))
UNEP/OzL.Pro/ExCom/82/13/Rev.1	Terms of reference for the second phase of the evaluation of the pilot demonstration projects on ODS disposal and destruction, in conjunction with RRR (Monitoring and evaluation work programme for 2019, annex I)
UNEP/OzL.Pro/ExCom/82/11	Final report on the evaluation of the refrigeration servicing sector
UNEP/OzL.Pro/ExCom/80/10 and Corr.1	Desk study for the evaluation of the refrigeration servicing sector
UNEP/OzL.Pro/ExCom/75/10	Desk study on the evaluation of the pilot demonstration projects on ODS disposal and destruction
UNEP/OzL.Pro/ExCom/69/12	Final evaluation report of multi-year agreement projects
UNEP/OzL.Pro/ExCom/58/8	Final report on the evaluation of terminal phase-out management plans
UNEP/OzL.Pro/ExCom/52/8	Extended desk study on incentive programmes for retrofits
UNEP/OzL.Pro/ExCom/49/7	Compendium of recommendations relevant to the evaluation of refrigerant management plans and national phase-out plans in non-LVCs focusing on the refrigeration servicing sector
UNEP/OzL.Pro/ExCom/41/7	Final report on the evaluation of the implementation of refrigerant management plans (RMPs)
UNEP/OzL.Pro/ExCom/31/18	Desk study on recovery and recycling projects (project completion reports)
UNEP/OzL.Pro/ExCom/30/9	The possibility of a desk study on recovery and recycling projects

Note: Different aspects related to recovery, recycling (re-use) and reclamation are covered in the above reports, as elements for the overall evaluation in the context of which they are analyzed.

Annex II

EVALUATION QUESTIONS

The list of questions below may be addressed through the clustering of issues during the preparation of the evaluation. In seeking to answer the questions below, the desk study may identify other issues for further analysis to facilitate a comprehensive analytical framework for the evaluation:

- (a) ***Adequacy of project planning, design and funding level:*** To what extent have the project planning phases, the design and the assessment of the funding level required to achieve the planned outputs of the recovery, recycling and reclamation (RRR)-related projects been adequate?
- (b) ***Monitoring the effective implementation of RRR projects:*** To what extent has the project planning phase considered the need to monitor progress in implementing RRR projects? To what extent have countries been able to monitor the quantities of recovered, recycled and reclaimed refrigerant? What have been the key challenges in monitoring those quantities?
- (c) ***Mapping of relevant stakeholders:*** Who are the relevant stakeholders when it comes to effectively implementing RRR and what are their respective roles and responsibilities (e.g., associations of technicians, companies, training centres, etc.)?
- (d) ***Implementing agencies and national ozone units (NOUs):*** What has the experience of the implementing agencies been while delivering assistance for RRR projects? What has the role of the NOUs been and how can it be improved and strengthened?
- (e) ***Customs:*** In those projects that included trade in recovered or reclaimed refrigerants, what has been the role of customs in facilitating the successful implementation of such trade and RRR in the country and region? What are the key challenges and what actions are being taken regarding illegal trade and the management of, inter alia, quota and licensing systems?
- (f) ***Refrigerant containment and life management:*** What activities have been undertaken to promote the recovery of refrigerants and how effective have they been? How can the acquired experience on RRR for HCFCs be used for HFC phase-down? What are the issues to be considered when dealing with blends versus pure substances? What could be done along the life cycle management to minimize the final burden in the end of the cycle?
- (g) ***Technological issues and scalability factors:*** What are the main technological constraints and elements to be considered to successfully achieve the RRR projects? What are the scalability factors to be considered in setting up RRR facilities?
- (h) ***Market factors and incentive schemes:*** What is the impact of market prices of alternative refrigerant options and what role can be played by regulations and incentive schemes, among other instruments to foster the use of RRR? Would incentive schemes leverage the participation of the relevant stakeholders required to ensure success and the sustainability of achievements?
- (i) ***Recovery and recycling (R&R) (re-use) networks and reclamation centres:*** How does the establishment of R&R networks contribute to achieving compliance, how do they function and what could be done to increase their performance? How do they feed into the collection process for the reclamation centres?

- (j) ***Effective implementation of reclamation schemes:*** What are the main factors that facilitated the successful implementation of reclamation schemes? When was R&R successfully implemented but reclamation could not be effectively implemented?
- (k) ***Geographical distribution:*** Does the desk study reveal potential geographical patterns, requiring different assistance modalities, based on the different baseline capacities of the recipient countries?
- (l) ***Effectiveness and sustainability of achievements:*** How effective has Multilateral Fund assistance and the work of the bilateral and implementing agencies been in promoting RRR and in contributing to strengthening the required infrastructure and related capacity building? What measures have been taken to ensure the sustainability of achievements?
- (m) ***Gender dimension:*** How effectively do the RRR projects incorporate the gender dimension, at both the design and implementation level?
- (n) ***Challenges, good practices and lessons learned:*** What are the key challenges, good practices and lessons learned, for each of the three components of RRR?