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执行蒙特利尔议定书
多边基金执行委员会
第八十次会议
2017 年 11 月 13 日至 17 日，蒙特利尔

2018 年监测和评价工作方案草案

导言

1. 本文件提出 2018 年监测和评价工作方案草案，供执行委员会审议。在提出工作方案中的监测和评价活动时，参照了执行委员会以前就历次会议就监测和评价所涉问题的讨论；对进行中的项目的进度报告和项目完成情况报告的审查；与双边和执行机构以及与秘书处的讨论。

2. 因此，这份监测和评价工作方案草案包括以下内容：

评价活动

- 制冷维修行业第二阶段的评价
- 评价氟氯烃淘汰管理计划编制活动的案头研究，以协助《基加利修正案》的执行
- 评价《蒙特利尔议定书》的项目和政策中将两性平等作为主流的案头研究

监测活动

- 多年期协定项目和个别项目的完成项目综合报告

3. 在执行 2018 年工作方案期间，可能出现其他或许需要执行委员会处理的问题。因此，在方案执行和划拨预算经费时，可以允许运用某种程度的灵活性，以应对任何这类问题。

2018 年的评价活动

制冷维修行业第二阶段的评价：实地考察

4. 这项活动是为了最后完成对制冷维修行业的评价，其起始工作是向第八十次会议提交的案头研究[1]，其中提议对一些国家进行考察。进行实地考察的目的是收集和分析信息，以解决案头研究指出的问题。根据考察结果，将总结经验教训，以促进制冷维修行业的今后项目编制和执行工作。 将为每个国家编写一份国家报告，并编写一份综合报告，总结考察结果并作出结论和提出建议。本文件附件一载有职责范围。

评价氟氯烃淘汰管理计划编制活动的案头研究，以协助《基加利修正案》的执行

5. 评价氟氯烃淘汰管理计划编制活动的案头研究将在第八十二次会议提出。这项案头研究将分析在编制氟氯烃淘汰管理计划时提供资金的各项活动，它们将导致建立能够监测消耗臭氧层物质（氟氯烃）进出口的许可证颁发和配额制度以及其他推动履行《蒙特利尔议定书》的政策，例如数据调查、设立信息管理系统、建立业界和政府部门间磋商机制以及编制初期计划。这项评价将对第 5 条国家为逐步减少使用氢氟碳化物制定类似政策和法规进行扶持活动和传授经验教训的选项和想法提供有价值的信息。工作范围将提交第八十一次会议。

评价两性平等主流化的案头研究

6. 评价《蒙特利尔议定书》的项目和政策中将两性平等作为主流的案头研究将提交给第八十一次会议。这份案头研究将分析将两性平等纳入落实《蒙特利尔议定书》的活动和项目所作的努力、促进相关项目中将两性平等作为主流和鼓励多边基金利益攸关方探索更有系统的方法将两性平等问题纳入其活动。为进行这项研究无需申请经费。案头研究的工作范围载于本文件附件二。

多年期协定项目和个别项目的综合项目完成报告

7. 高级监测和评价干事将与相关双边和执行机构密切合作，向第八十一次和第八十二次会议提交所有尚未提交的与多年期协定项目和个别项目有关的项目完成情况报告。

8. 综合项目完成报告将向执行委员会说明各项项目完成情况报告中介绍的结果和经验教训。

提交报告的时间表

9. 表 1 载列了 2018 年监测和评价工作方案草案拟议进行的活动。

[1] UNEP/OzL.Pro/ExCom/80/10。

表 1. 提交 2018 年监测和评价工作方案的活动的时间表

第八十一次会议	第八十二次会议
多年期协定项目和个别项目综合项目完成报告	多年期协定项目和个别项目综合项目完成报告
评价《蒙特利尔议定书》的项目和政策中将两性平等作为主流的案头研究	制冷维修行业第二阶段评价的最后报告
评价氟氯烃淘汰管理计划编制活动的案头研究以协助《基加利修正案》的执行的工作范围	评价氟氯烃淘汰管理计划编制活动的案头研究，以协助《基加利修正案》的执行
制冷维修行业第二阶段评价的初步报告	

预算

10. 表 2 开列进行 2018 年监测和评价工作方案的预算。这项预算包含顾问费以及顾问和必要时参与个案研究及出席区域会议的高级监测和评价干事的差旅费。

表 2. 2018 年监测和评价工作方案的拟议预算

说明	金额（美元）
制冷维修行业第二阶段的评价	
实地考察(9 个国家，7 天/国家)	
工作人员：	
• 差旅费(4 x 6,000 美元)	24,000
• 每日生活津贴(28 x 350 美元/天)	9,800
顾问	
• 顾问费：(7 天 x 9 个国家 x 500 美元/天)	31,500
• 差旅费(9 x 3,000 美元)	27,000
• 每日生活津贴(63 x 350 美元/天)	22,050
编写报告 (9 x 7 天 x 500 美元/天)	31,500
编写综合报告(12 天 x 500 美元/天)	6,000
评价氟氯烃淘汰管理计划编制活动的案头研究，以协助《基加利修正案》的执行	
编写报告 (30 天 x 500 美元/天)	15,000
评价《蒙特利尔议定书》的项目和政策中将两性平等作为主流的案头研究	
编写报告	0
向环境规划署年度网络会议介绍经验教训数据库*	
• 差旅费(1 x 2,000 美元)	2,000
• 每日生活津贴(5 x 386 美元/天)	1,930
小计	**170,780**
杂项开支**	4,000
共计	**174,780**

* 根据第 75/5 号决定(f)段，秘书处研制了查找各个别项目以及多年期协定项目完成情况报告中载列的经验教训的在线搜索引擎，因此，利益攸关方可以很容易地获取这些经验教训，例如在其编制或执行类似的项

目时[2]。为了散发这项信息和保证这项工具得到普遍使用，高级监测和评价干事将向环境规划署的年度网络会议介绍这个数据库。在 2018 年巴黎举行的这次会议上将聚集了所有臭氧干事。
** 杂项费用预备用于出差时没有预见到的差旅费以及未预期地替换监测和评价办公室设备的费用。

期望执行委员会采取的行动

11. 谨请执行委员会：

(a) 要求高级监测和评价干事向第八十一次会议提交评价氟氯烃淘汰管理计划编制活动的案头研究以协助《基加利修正案》的执行的工作范围，以及

(b) 核准 UNEP/OzL.Pro/ExCom/80/11/Rev.1 号文件表 2 所载预算为 174,780 美元的 2018 年监测和评价工作拟议方案。

[2] 个别项目完成情况报告和多年期协定项目完成情况报告的搜索引擎分别参见：http://www.multilateralfund.org/pcrindividual/search.aspx 和 http://www.multilateralfund.org/myapcr/search.aspx

Annex I

TERMS OF REFERENCE FOR THE SECOND PHASE OF THE EVALUATION OF THE REFRIGERATION SERVICING SECTOR

Background

1. At its 79th meeting, the Executive Committee approved the terms of reference for the evaluation of the refrigeration servicing sector. The importance of the servicing sector as one of the largest consumer of ODS as well as one that will significantly be affected by the HFC phase-down, called attention on the opportunity of such evaluation. The evaluation was planned in two stages: stage one consisted of a desk study, and stage two country evaluations reports following the field visits, which would be based on the findings and recommendations of the desk study.

2. The desk study examined selected projects in the refrigeration servicing sector in both low-volume consuming (LVC) and non-LVC countries[3], in various geographical regions and implemented by various bilateral and implementing agencies (IAs). It concluded that the HCFC phase-out management plans (HPMPs) were in majority successfully implemented, with only 2.8 per cent of cases of non-compliance with the Montreal Protocol and levels of consumption well below the control targets of the Montreal Protocol. Smaller ODS consuming countries may need a more focused assistance concerning HCFC consumption monitoring and reporting. The desk study also tackles the causes of delays in project implementation; the institutional strength in the legislative area; the attitude towards safety issues concerning technology based on flammable refrigerants; the impact of demonstration projects and the need for disseminating results; issues related to refrigerant containment in terms of recovery, recycling and reclamation; and energy efficiency.

3. The field visits will focus on key issues stressed in the desk study and will collect updated information about the project implementation, based on direct observation and discussions with various stakeholders.

Objective of the evaluation

4. The objective of the second stage of the evaluation is taking into account the issues identified in the desk study: (a) to provide a thorough analysis of the project implementation in the refrigeration servicing sector in a sample of countries; (b) to formulate lessons learned for improving future similar projects; and (c) to further assess potential issues that could be related to the phasing-down of HFCs in the servicing sector. Furthermore, the evaluation will strive to provide quantitative data on the impacts and the costs of the activities in the servicing sector to the extent possible.

5. The evaluation will address the following issues:

Project implementation

6. It will analyze the main activities in the servicing sector under the HPMPs as well as their impact on HCFC phase-out and energy efficiency improvements to the extent possible.

[3] The countries included in the study are: Burkina Faso, Djibouti, Ghana, Nigeria and Senegal in the African region; Bahrain, Kuwait and Saudi Arabia from the Middle East region; Cambodia, China, Fiji, the Islamic Republic of Iran and Maldives from the Asia and Asia-Pacific region; Armenia, Bosnia and Herzegovina and the Former Yugoslav Republic of Macedonia from the Eastern European region; Argentina, Brazil, Chile, Grenada, Mexico, Peru and Uruguay from the Latin American and Caribbean region; and the Cook Islands, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Samoa, the Solomon Islands, Tonga, Tuvalu and Vanuatu all englobed under one single project for the so called Pacific Island Countries (PICs).

7. How did they contribute to the transition to low-global warming potential (GWP) alternatives and what were the key barriers or success factors? How can HFC phase-down activities in the servicing sector build on this experience? Were technical assistance and capacity building taken into consideration to address safety issues associated with low-GWP and zero-GWP alternatives and if so, what kind of activities were undertaken and to what extent where they effective?

8. How, if at all, did activities address the risks associated with retrofitting HCFC-based equipment with flammable alternatives?

9. What were the issues related to availability and affordability of spare parts and refrigerants and how have they been addressed?

10. What were the main issues encountered in the project implementation in LVC countries as compared to non-LVC countries?

11. All the countries covered by the desk study presented delays with various causes, such as the reorganization of the Government institutions, complexity of activities, communication with the stakeholders. The field visits will gather more in-depth information about these delays, their causes and how to avoid them in the future.

12. According to the desk study, the refrigeration associations have been key in the design and implementation of all the activities directed to the refrigeration servicing sector. What have been the roles of local refrigeration associations in implementing phase-out activities? How did the major stakeholders coordinate and communicate? What can be learned relevant to the phase-down of the HFCs?

13. Was reporting on the implementation of activities regularly done? Is the reporting providing relevant information on challenges encountered and lessons learned?

14. How have the tools developed by UNEP CAP for the refrigeration servicing sector been used? Have they proved useful and adaptable locally? What can be learned relevant to the phase-down of HFCs?

15. To what extent activities being implemented have contributed or could potentially contribute to HFC phase-down in applications not covered in the HPMPs (e.g., domestic refrigeration, commercial refrigeration based on R-404A and R-407C, and mobile air-conditioning)? What could be modified in the project design and implementation to facilitate this?

Policy, legal and regulatory frameworks

16. Countries have adopted various legislative and regulatory measures to control HCFC supply through imports including licensing and quota system for HCFC-based equipment. Several countries have also banned imports of all used HCFC-based equipment, among others. Was there a delay in adopting this legislation and why? Can the enforcement procedures and monitoring tools developed be applied to HFC use and HFC-based equipment?

17. What have been the most common regulatory measures adopted by the countries in relation to the refrigeration servicing sector?

18. To what extent the following measures related to the refrigeration servicing sector have been established and implemented in Article 5 countries as part of the HPMPs: mandatory reporting by refrigerant importers and exporters; bans on “non-refillable” (disposable) refrigerant containers; extension of import/export licensing system to all refrigerants; HCFC emissions control measures (e.g., compulsory recovery); ban on the use of HCFC-141b for flushing systems during servicing; ban on imports of

second-hand HCFC based equipment; and, predetermined schedules for leakage check by certified personnel for systems with charges above certain limit; and large systems record-keeping (e.g., HCFC logbooks and HCFC-based equipment log books)? Which have been the main barriers to introduce these measures?

19. What measures have been taken to enable the safe introduction of low-GWP, flammable or toxic refrigerants and which were the main barriers in introducing them? What were the impacts? Were there interactions with national, regional or international standards setting bodies related to the safe use of flammable or toxic alternatives?

20. Have activities been undertaken to support inspections and certifications, standardized technical testing, and enforceable technical standards for alternative technologies and if so, what was their impact? To what extent can activities for the phase-down of HFCs build on these activities?

21. How is the country addressing illegal trade of refrigerants and what can be learned relevant to the phase-down of HFCs?

22. Were there new enforcement procedures and monitoring tools developed to control HCFC use in the sector as well as HCFC-based equipment imports? If so, can they be applied to HFC use and HFC-based equipment?

Technology-related issues

23. In each country the evaluation team will inquire about what technology is being implemented and what challenges were encountered to service equipment with alternative technologies? Were alternatives technologies as well as related equipment and tools available in the local markets? Have alternatives to HCFCs that sustain the operation of HCFC-based equipment until the end of life been promoted? If so, which alternatives have been used and what were the results**,** including on energy efficiency and refrigerant use?

24. Did these projects influence technology selection during the assembly, installation, initial charging and commissioning of new refrigeration equipment by servicing enterprises and technicians? What were the main factors influencing the choice of technology? What can be learned relevant to the project design?

25. What was the role of international companies in introducing alternative technologies and to what extent has this influenced the refrigeration servicing sector, HCFC phase-out and introduction of low-GWP alternatives?

26. How does reducing the refrigerant charge size in the design of systems impact the amounts of refrigerants emitted and how does it impact energy efficiency?

Retrofitting HCFC-based equipment with flammable alternatives

27. The desk study implied that for the general public, and even some of the refrigeration servicing sector, the risk of using and servicing equipment containing flammable substances was assumed to be negligible. To what extent is information made available to the end users and relevant stakeholders in the servicing sector on how to manage the risks associated with flammable or toxic substances accessible to the users?

28. How, if at all, did servicing activities address the risks associated with retrofitting HCFC-based equipment with flammable alternatives?

Demonstration projects for the servicing sector

29. How did demonstration projects contribute to the servicing sector? Did they serve as proof of the feasibility of technology solutions under local conditions? What were the lessons learned from demonstration projects?

Energy efficiency

30. What are the initiatives related to obtaining better energy efficiency? Were there improvements of energy efficiency through servicing activities? What were the key factors relevant to achieving these energy efficiency improvements and how were they sustained?

Refrigerant containment (recovery, recycling, reclamation)

31. What activities have been undertaken to promote the recovery of refrigerants and what was their impact? What strategies were developed to enhance recovery, recycling and reclamation? What measures have been taken to sustain these activities in a cost-effective manner? Can recovery and reclamation tools and techniques for HCFCs be transferred to the HFC phase-down?

32. Which institutions are responsible for the management of refrigerant containment practice and how were they involved in the activities?

33. Were there refrigerant reclaiming facilities established? Were stockpiles of used or unwanted controlled substances managed cost-effectively?

34. What measures are in place to prevent leakage and are they successful? Can this be emulated to other subsectors?

35. What measures were taken to manage waste recuperation (e.g., empty refrigerant cylinders)? Is it mandatory to use reusable cylinders? If not, what is the percentage of one-time cylinders use?

36. What is the rate of recycling or reclamation? What is the percentage of new refrigerants substituted?

Training and sustainability of training results

37. The evaluation will further inquire on how training programmes for refrigeration technicians have managed to build their own sustainability by ensuring that the curricula of technical training institutions are appropriately modified with such training.

38. How did the Multilateral Fund resources help in enhancing the capacity of national vocational/training centres and other local institutes involved in training of refrigeration technicians?

39. How many technicians were trained since the beginning of the project and what percentage of the total pool of technicians does it represent? To what frequency must the training be renewed, to be effectively up-to-date?

40. Have the curricula of the training programmes been updated regularly? Do they integrate information on safe handling of flammable refrigerants and an understanding of related regulations and standards? Do they address issues related to the consequences of poor installation and servicing of equipment that uses flammable refrigerants? Do training programmes include a module on good practices and standards in refrigeration services? To what extent are they relevant to the phase-down of HFCs**?**

41. Is the importance of low-GWP alternatives emphasized in the training programmes for refrigeration technicians?

42. What types of certification schemes have been established in different Article 5 countries and how effective are they to ensure good practices in refrigeration? Are these made mandatory through regulations? Was there any obstacle in making the certifications mandatory? Is there widespread adoption of formal codes of practices? Were good practices included in the curricula of technical training schools? Are the curricula adapted to address, among other: good practices, proper handling/management of refrigerant including flammable alternatives and low-GWP and zero-GWP alternatives, and mandatory training for technicians?

43. What lessons in training in good practices can be applied for long-term strategies to be implemented?

Awareness-raising and dissemination of information

44. What are the main channels to disseminate updated information on technically and economically feasible alternative technologies to be applied by local refrigeration and air-conditioning manufacturers?

45. How did technical assistance projects address awareness-related challenges? What awareness-raising strategy was used and what were the results?

46. Are there awareness campaign tailored to a specific target audience? How did the servicing community change following these activities?

47. Was there any collaboration with the customs departments in raising awareness on the handling of the new refrigerants?

Funding

48. What was the level of co-funding leveraged by the MLF activities?

49. How did countries identify sources of co-financing? What were the obstacles, opportunities and challenges to identify such sources of co-financing and what lessons can be learned from there? Were there delays due to obtaining co-funding?

50. Related to the adequacy of funding, the evaluation will look into the issue raised by the desk study that some funding was inadequate or excessive.

51. How the flexibility, granted to Article 5 countries through their Agreements with the Executive Committee, was used to optimize the allocation upon implementation of the HPMP?

52. How will the increase in the funding available for the servicing sector under decision 74/50, affect the ongoing projects and acceptance of alternatives to HCFCs and HFCs with low-GWP and zero-GWP?

Other sustainability-related issues

53. The field study will assess the sustainability of activities in the servicing sector, taking into account the findings of the desk-study, and identify the key factors relevant to sustaining the activities' impacts.

54. What activities could be implemented to reduce emissions during the operation of equipment, while maintaining energy efficiency?

55. What was the impact of the project on small servicing businesses?

56. How will the servicing sector be affected by the phase-down of HFCs?

57. How did IS, CAP and HPMP activities impact on the HCFC phase-out in the servicing sector, and what are the possibilities to increase synergies to effectively address the servicing sector?

58. Have servicing activities contributed to improving the energy efficiency of the equipment? If so, were such improvements in energy efficiency monitored or assessed?

Monitoring

59. What indicators are monitored? What is the leakage rate and reuse of refrigerants? What structures are in pace for continued monitoring?

Methodology

60. A team of consultants will be recruited based on their experience and knowledge of the subject matter and of the functioning of the Montreal Protocol and the Multilateral Fund. The team will analyse the existing documents as well as the conclusions and recommendations of the desk study and collect additional information from field visits. As much as possible, reliable quantitative information will be collected together with qualitative information. Discussions with the Secretariat staff, the National Ozone Unit (NOU) and the bilateral and IAs will be organized as needed.

61. Each field visit will yield a country evaluation report which will be shared with the Secretariat, the bilateral and IAs and the NOU for comments. At the 81st meeting, a short report with key findings from countries visited until this period will be presented. A synthesis report will summarize the findings from the country evaluation reports and formulate lessons learned and recommendations for consideration by the Executive Committee at the last meeting in 2018.

Sample of countries

62. The following countries are proposed to be part of the sample of countries to be visited by the evaluation team, based on geographical area, IAs, and specificity of projects:

(a) Chile (Latin American country with servicing in supermarkets; UNDP, UNIDO and UNEP)

(b) Grenada (Caribbean country with 20 recycling and recovery centers and awareness-raising to promote alternative technologies; UNEP and UNIDO);

(c) India (Asian country with the use of R-290; UNDP; UNEP, and Germany);

(d) Kyrgyzstan (Europe and Central Asian (ECA) region with an innovative approach and a phase-out planned for 2020; UNDP and UNEP);

(e) Oman (Middle Eastern country with activities in recovery of refrigerant; UNEP and UNIDO);

(f) Samoa (PIC; UNEP);

(g) Senegal (Western Africa; UNEP and UNIDO);

(h) Turkey (ECA region, demonstration project; UNEP and UNIDO); and

(i) Zimbabwe (Eastern Africa; Germany).

Annex II

DESK STUDY ON GENDER MAINSTREAMING IN THE MONTREAL PROTOCOL PROJECTS AND POLICIES

Introduction and rationale for the desk study

1. The concept of gender mainstreaming[1] was emphasized in 1995 at the Fourth World Conference on Women in Beijing. It was included in the Beijing Platform for Action and became an important element of the United Nations (UN) policies and programmes.[2]

2. All UN agencies have a responsibility to adopt a gender perspective and analyze how gender issues are relevant to their mandate. The implementing agencies (IAs) of the Multilateral Fund (MLF) have a gender policy[3], and one agency has prepared a guide for gender mainstreaming into the MLF projects in 2015.[4] During the Inter-agency coordination meeting[5], bilateral and IAs mentioned gender oriented activities including training and workshops. The Kigali Amendment is an opportunity to include gender mainstreaming in the policies and projects of the MLF.

3. The desk study can identify up-to-date information and knowledge products on the linkages of gender and the largely technical activities undertaken under the MLF, including issues germane to the broader environment sector, such as women's representation in decision-making and participation in education and training, are relevant to the implementation of the MLF projects.

Objectives of the desk study

4. To contribute to a more pro-active approach to gender mainstreaming and to explore a more systematic way to include gender relevance in the MLF funded activities the study will examine how a gender perspective is applied in the projects funded by the MLF; and analyze the gender policies of the bilateral and IAs agencies and how they were incorporated into the projects and activities. Based on a sample of countries, it will inquire how gender policies of the IAs are taken into account in MLF activities. It will try to answer the following questions:

(a) How gender mainstreaming is included in the policies and projects of the IAs? Is it taken into account in project design and in the project cycle?

(b) Are there gender advisers and gender focal points in the agencies, and if yes, how are they involved in mainstreaming gender in projects related to the MLF? Are they regularly consulted? Do they participate in project preparation?

(c) What activities are undertaken by the IAs to implement their policies to mainstream gender in their projects under the MLF?

(d) Are existing policies helping women to be represented in the decision-making process on issues related to the implementation of projects funded by the MLF?

[1] The process of assessing the implications for women and men of any planned action, including legislation, policies and programmes, in all areas and at all levels.
[2] United Nations. Report of the Economic and Social Council for 1997. A/52/ 18 September 1997.
[3] UNEP: Policy and Strategy for Gender Equality and the Environment. 2014-2017 (P&S); World Bank Group: Gender Strategy: Gender Equality, Poverty Reduction and Inclusive Growth. 2015**;** UNDP: Gender Equality Strategy 2014-2017; UNIDO: Gender Equality and Empowerment of Women Strategy. 2016-2019.
[4] UNIDO: Guide on Gender Mainstreaming. Montreal Protocol Projects.
[5] Montreal, 5 – 7 September 2017.

(e) Are actions undertaken to provide men and women equal opportunities to benefit from capacity building activities? Are they equally encouraged to participate in trainings and workshops provided by vocational schools and enterprises?

(f) Are there gender statistics on women participation in the activities related to the MLF?

(g) Are there gender sensitive awareness campaigns?

(h) Are there policies that address the issue of gender balance?

(i) Do IAs promote that project and policies acknowledge gender differences (e.g., men and women are differently affected by toxic substances and are there protective measures recommended)?

Methodology

5. The desk study will undertake a review of existing documents: policies papers, project proposals, progress reports and project completion reports. An electronic survey will be prepared targeting a sample of countries where a variety of projects are implemented and interviews will be carried out by telephone with the bilateral and IAs and NOUs. A report will be prepared and presented to the 81st meeting of the Executive Committee with conclusions on systematic way(s) to include gender relevance in the MLF funded activities, where relevant.