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执行蒙特利尔议定书
多边基金执行委员会
第九十三次会议
2023 年 12 月 15 至 19 日，蒙特利尔
临时议程[1] 项目 9(c)和 9(d)

世界银行 2023 年工作方案修正案

[1] UNEP/OzL.Pro/ExCom/93/1。

基金秘书处的评论和建议

1. 世界银行请执行委员会核准 550,000 美元外加机构支助费用 38,500 美元，用于表 1 所列其 2023 年工作方案修正案。来文附于本文件。

表 1：世界银行 2023 年工作方案修正案

国家	活动/项目	申请数额（美元）	建议数额（美元）
A 部分：建议一揽子核准的活动			
A1：氟氯烃淘汰管理计划项目的编制			
泰国	氟氯烃淘汰管理计划的编制（第三阶段）	90,000	90,000
泰国	商业制冷行业氟氯烃淘汰管理计划投资项目的编制	80,000	80,000
	A1 小计	170,000	170,000
	机构支助费用	11,900	11,900
	A1 合计	181,900	181,900
A2：使用过或不需要的受控物质国家库存清单编制和收集、运输和处置此类物质的计划的制定[2]			
越南	使用过或不需要的受控物质国家库存清单和计划的编制	100,000	100,000
	A2 小计	100,000	100,000
	机构支助费用	7,000	7,000
	A2 合计	107,000	107,000
A3：逐步减少使用氢氟碳化物的背景下保持和/或提高替代技术和设备能效的试点项目的编制[3]			
马来西亚	保持和/或提高独立商业制冷行业能效的试点项目的编制	30,000	30,000
	A3 小计	30,000	30,000
	机构支助费用	2,100	2,100
	A3 合计	32,100	32,100
B 部分：建议单独审议的活动			
B1：基加利氢氟碳化物执行计划项目编制			
泰国	基加利氢氟碳化物执行计划的编制（第一阶段）	220,000	*
	B1 小计	220,000	*
	B1 机构支助费用	15,400	*
	B1 合计	235,400	*
B2：在逐步减少使用氢氟碳化物的背景下保持和/或提高替代技术和设备能效的试点项目的编制			
越南	保持和/或提高空调行业能效的试点项目的编制	30,000	*
	B2 小计	30,000	*
	B2 机构支助费用	2,100	*
	B2 合计	32,100	*
	A1、A2、A3、B1、B2 合计	550,000	300,000
	A1、A2、A3、B1、B2 机构支助费用	38,500	21,000
	总计	588,500	321,100

* 建议单独审议

[2] 以下简称“使用过或不需要的受控物质国家库存清单和计划的编制”。

[3] 以下简称“保持和/或提高能效的试点项目的编制”。

A 部分：建议一揽子核准的活动

A1：氟氯烃淘汰管理计划项目的编制

项目说明

2. 如表 1 的 A1 部分所示，作为指定执行机构，世界银行提交了编制泰国氟氯烃淘汰管理计划第三阶段的申请，以及编制泰国商业制冷行业投资项目的申请。

3. 世界银行提供了为支持申请氟氯烃淘汰管理计划第三阶段项目编制所需开展的各项活动的说明，其中包括：申请项目编制资金的理由；氟氯烃淘汰管理计划第二阶段的执行进度报告；以及在项目编制期间将开展的活动清单和相应预算。

秘书处的评论

4. 在审查上述申请时，秘书处考虑了第 71/42 号决定所载为第 5 条国家编制氟氯烃淘汰管理计划供资的准则、氟氯烃淘汰管理计划第二阶段的进度（包括截至本文件编制时的付款执行情况）；以及第 84/46 号决定(e)段。[4] 秘书处注意到，所申请的资金符合第 71/42 号决定，而且申请符合第 82/45 号决定的规定，即允许在氟氯烃淘汰管理计划第二阶段结束日期前两年提交第三阶段项目编制申请。[5]

5. 秘书处注意到泰国氟氯烃淘汰管理计划第二阶段的执行在经历过一段拖延后，目前正在取得进展，[6] 并注意到第二次付款于 2022 年得到核准。秘书处进一步注意到泰国遵守了《蒙特利尔议定书》下的管制目标，且其报告的年度氟氯烃消费量并未超过泰国政府与执行委员会之间的协定中规定的年度最高允许消费量；秘书处还注意到世界银行报告称，将在 2023 年年底之前发布 HCFC-141b 的禁令通知。世界银行确认泰国氟氯烃淘汰管理计划第三阶段将在 2030 年 1 月 1 日之前淘汰基准氟氯烃消费量的 100%。

6. 为投资项目申请的项目编制资金将用于一项商业制冷行业计划，该计划旨在使泰国仍使用氟氯烃进行的制造活动改用氢氟碳化物技术，并可能涉及 12 家使用 HCFC-22 的中小型企业。世界银行确认该投资项目将作为泰国氟氯烃淘汰管理计划第三阶段的一部分提交。

秘书处的建议

7. 秘书处建议以表 1 的 A1 部分所示供资水平，对泰国氟氯烃淘汰管理计划第三阶段的项目编制以及泰国商业制冷行业氟氯烃淘汰管理计划投资项目的编制予以一揽子核准。

[4] 只有氟氯烃淘汰管理计划第二阶段已被核准且减排目标低于 2025 年履约目标的国家，才可将氟氯烃淘汰管理计划第三阶段纳入业务计划。

[5] 泰国政府与执行委员会关于氟氯烃淘汰管理计划第二阶段所达成协定的附录 2-A 中，最高允许消费量得到规定的最后一年是 2023 年。

[6] 泰国氟氯烃淘汰管理计划第二阶段（2018–2023 年）旨在将氟氯烃消费量减少基准消费量的 61.8%，其在第八十二次会议上得到核准，供资金额为 3,791,077 美元，外加世界银行 265,375 美元的机构支助费用。

A2：使用过或不需要的受控物质国家库存清单编制和收集、运输和处置此类物质的计划的制定

项目说明

8. 如表 1 的 A2 部分所示，作为指定执行机构，世界银行提交了编制越南使用过或不需要的受控物质国家库存清单和计划的申请。

秘书处的评论

9. 在审查该申请时，秘书处考虑了第 91/66 号决定所载关于使用过或不需要的受控物质国家库存清单的编制标准，以及拟议的项目编制活动及其与该国国家淘汰/逐步减少计划（如氟氯烃淘汰管理计划或基加利氢氟碳化物执行计划）之间的关联。秘书处注意到，供资申请符合第 91/66 号决定，并注意到，作为指定执行机构，世界银行使用相关项目提案的来文表格，提供了越南为编制使用过或不需要的受控物质国家计划和库存清单而需开展的活动的说明。

10. 活动包括编制受控物质生命周期管理计划（以跟踪和管理制冷剂与灭火剂从最初进口到回收、处置和销毁的全过程）以及最后报告；开展有关利益方磋商及数据收集；分析即将下线的设备和受控物质数量；分析旨在将回收、再生和处置计划成本降至最低的各项方案；就性别因素进行考量，鼓励男女均衡参与项目，并酌情收集按性别分列的数据。

秘书处的建议

11. 秘书处建议以表 1 的 A2 部分所示供资水平，对越南使用过或不需要的受控物质国家库存清单的编制以及此类物质的收集、运输和处置方案的制定予以一揽子核准。

A3：在逐步减少使用氢氟碳化物的背景下保持和/或提高替代技术和设备能效的试点项目的编制

项目说明

12. 如表 1 的 A3 部分所示，作为指定执行机构，世界银行提交了编制马来西亚保持和/或提高能效的试点项目的申请。来文符合第 91/65 号决定。

13. 项目编制申请是对一项提案的补充，该提案旨在使两家使用 HFC-134a 和 R-404A 的商用制冷设备中小型制造商改用 R-290 和 R-600a 技术，载于提交本次会议的基加利氢氟碳化物执行计划第一阶段。根据第 91/65 号决定拟议的试点项目将侧重于在这些企业改换技术的过程中实施的能效改进措施，其中将包括将固定转速压缩机改换为变频压缩机；试点项目还将探索设计和组装不含氢氟碳化物的变频产品的可行性，而不是依赖于市场供应此类产品。该项目的总体目标是强化马来西亚独立制冷设备的能效政策，并支持马来西亚本土制造商提高其在节能装置制造业的份额。项目编制活动将包括对两家企业和能效监管部门开展能力需求评估；与该地区的技术供应商进行磋商；以及设计和制定最后项目提案，包括确定技术和专业知识的来源。

秘书处的评论

14. 秘书处根据第 91/65 号决定规定的项目标准审查了项目提案，并注意到提出的项目编制申请符合该决定(b)段(一)a.分段，该段规定，对于旨在在家用制冷设备、独立商用制冷设备、住宅和商用空调以及热泵制造中弃用氢氟碳化物的同时保持和/或提高能效的技术改换项目，应予以优先考虑。

15. 秘书处注意到，项目编制申请与该国基加利氢氟碳化物执行计划第一阶段存在关联，后者提出要在独立商用制冷装置的制造中全面淘汰 HFC-134a 和 R-404A。世界银行确认两家企业由此产生的项目包含于基加利氢氟碳化物执行计划第一阶段，可改善由这两家企业制造的独立商用制冷设备的能效，并将促使该国制定扶持政策和标准。秘书处还澄清道，如能在两家企业的技术改换活动开始前将试点项目提交审议，可确保活动的协调执行，世界银行也确认了这一点。世界银行还确认，由此产生的项目符合第 91/65 号决定 b 段(四)分段的要求。

秘书处的建议

16. 秘书处建议以表 1 的 A3 部分所示供资水平，对马来西亚在向低全球升温潜能值替代制冷剂过渡的同时提高商业制冷行业能效的试点项目编制申请予以一揽子核准。

B 部分：建议单独审议的活动

B1：基加利氢氟碳化物执行计划项目编制

项目说明

17. 如表 1 的 B1 部分所示，作为指定执行机构，世界银行提交了编制泰国基加利氢氟碳化物执行计划第一阶段的申请。

18. 来文包含关于泰国 2020 年氢氟碳化物和氢氟碳化物混合物的消费量数据，以及对编制泰国基加利氢氟碳化物执行计划第一阶段总体战略所需开展活动的说明。项目编制活动包括对氢氟碳化物消费量开展全国性调查和数据收集；分析氢氟碳化物及其替代品的使用情况并对使用氢氟碳化物的设备进行调查；围绕氢氟碳化物的逐步减少使用进行政策和立法审查；开展一项立法和监管审查；以及制定逐步减少使用氢氟碳化物的总体战略。

19. 世界银行正在提交这项申请，指出泰国政府已核准《基加利修正案》的批准，但批准书尚未交存联合国托存图书馆。

秘书处的评论

20. 在审查该申请时，秘书处考虑了第 87/50 号决定所载关于编制基加利氢氟碳化物执行计划的准则、拟议的项目编制活动及其与扶持活动的关联，以及该国其他氢氟碳化物相关项目。

21. 作为指定执行机构，世界银行使用基加利氢氟碳化物执行计划项目编制申请格式，说明了为制定总体战略所需开展的活动。秘书处注意到，该国提供了一封认可函，表明国家采取行动逐步减少使用氢氟碳化物的意愿；还注意到供资申请符合第 87/50 号决定(c)段。

22. 秘书处进一步注意到，虽然泰国政府已核准《基加利修正案》的批准，并正在完成向联合国托存图书馆交存批准书的内部核准程序（预期将在执行委员会会议召开前或召开时完成），但批准《基加利修正案》是考虑为编制基加利氢氟碳化物执行计划供资的先决条件。因此，秘书处告知世界银行，将该申请列入单独审议是因为批准程序可能会在执行委员会会议召开之前完成；然而，如果届时批准书尚未交存，则要撤回申请并在下次会议上提交。世界银行同意这一做法，并保证届时将完成批准程序。

秘书处的建议

23. 执行委员会不妨考虑核准 220,000 美元外加机构支助费用 15,400 美元，用于泰国基加利氢氟碳化物执行计划的项目编制，条件是在执行委员会第九十三次会议前已向联合国托存图书馆交存正式批准书，且联合国托存图书馆已收到该批准书，表明该国已批准《基加利修正案》。

B2：在逐步减少使用氢氟碳化物的背景下保持和/或提高替代技术和设备能效的试点项目的编制

项目说明

24. 如表 1 的 B2 部分所示，作为指定执行机构，世界银行提交了越南保持和/或提高能效的试点项目的编制申请。来文符合第 91/65 号决定。

25. 该项目编制申请可帮助一家分体式空调设备制造商（Nakagawa）采用更加节能的设计，并可能促进修订 2011 年起实行至今的越南变频式室内空调最低能耗标准。该试点项目将包括对越南市场上室内空调的当前平均能效和所用制冷剂进行市场评估。项目编制的目的将是确定能效更高的装置的设计和维修要求，包括将使用 HFC-32 的固定转速型号改换为变频式装置的可行性；开展的活动将包括对该企业和能效监管部门开展能力需求评估；与技术供应商进行磋商并制定最后项目提案，包括确定技术和专业知识的来源。

秘书处的评论

26. 秘书处根据第 91/65 号决定规定的项目标准审查了项目提案，并注意到提出的项目编制申请符合该决定(b)段(一)a.分段，该分段规定，对于旨在在家用制冷设备、独立商用制冷设备住宅和商用空调以及热泵制造中弃用氢氟碳化物的同时保持和/或提高能效的技术改换项目，应予以优先考虑。

27. 秘书处注意到，作为氟氯烃淘汰管理计划第二阶段的一部分，Nakagawa 收到了用于将固定转速空调使用的 HCFC-22 转换为 HFC-32 的资金。虽然由此产生的试点项目可提高使用 HFC-32 的设备的能效，因为此类设备将从固定转速空调转换为使用变频技术的变频空调，但秘书处注意到第 91/65 号决定在这些能效试点项目与逐步减少使用氢氟碳化物

的背景之间建立了具体联系。秘书处注意到 HFC-32 既是越南也是该地区的空调首选技术，因此对该企业是否计划通过该项目改换使用非 HFC-32 替代技术表示关切。

28. 世界银行注意到秘书处的关切，并告知该企业目前尚无法改用非氢氟碳化物低全球升温潜能值制冷剂，因为该企业是一家小型制造商，需要选择一项在技术上和经济上均可行且可用的成熟技术。然而，采用变频式空调将为该国空调制造商在当前提高产品能效并在未来改换使用低全球升温潜能值制冷剂奠定坚实的基础。世界银行进一步注意到，试点项目的更广泛目标将是修订越南最低能效标准，这可提高和改善该国空调能效。在这方面，世界银行强调该申请符合第 91/65 号决定的标准。

秘书处的建议

29. 执行委员会不妨考虑核准 30,000 美元外加机构支助费用 2,100 美元，用于越南提高空调行业能效的试点项目的编制申请。

2023 BUSINESS PLAN
WORK PROGRAM

WORLD BANK IMPLEMENTED
MONTREAL PROTOCOL OPERATIONS

Presented to the
93rd Meeting of the Executive Committee
of the Multilateral Fund

20 October 2023

WORK PROGRAM FOR

WORLD-BANK IMPLEMENTED MONTREAL PROTOCOL OPERATIONS

1. This proposed work program for Bank-Implemented Montreal Protocol Operations is prepared on the basis of the 2023-2025 World Bank Business Plan which was approved by the Executive Committee at its 91st meeting.

2. The 2023-2025 World Bank Business Plan consists of investment and non-investment activities to assist Article 5 partner countries to meet their HCFC reduction target, the 2020 35% reduction in both production and consumption sectors. The Business Plan includes, in addition to deliverables associated with previously approved and new investment activities, requests to extend support for implementation of existing institutional strengthening projects in 2 countries.

3. The 2023-2025 Business Plan also includes investment and non-investment activities for the World Bank client countries that either have ratified or in the process of ratifying the Kigali Amendment to phasedown HFCs. These activities will ensure their compliance with the 2024 freeze target and the 2029 10% reduction in the consumption sectors.

2023 Work Program – ExCom 93 Amendment

4. The proposed 2023 Work Program being submitted for consideration at the 93rd Meeting of the Executive Committee, includes four (5) funding requests:

(i) One (1) for preparation of energy efficiency project in refrigeration sector for Malaysia

(ii) One (1) for preparation of Kigali Implementation Plan for Thailand

(iii) One (1) for preparation of Stage III HPMP for Thailand

(iv) One (1) for preparation of energy efficiency project in air-conditioning sector for Viet Nam

(v) One (1) for preparing life cycle management plan for controlled substances for Viet Nam

5. Brief description of the work program amendment activity requests are highlighted below.

Table 1: Funding Requests Submitted for Consideration by the 93rd Meeting of the Executive Committee

Country	Request (US$)	Support Costs (US$)	Duration (months)	Description	Supporting document
Malaysia	30,000	2,100	12-18	Preparation of energy efficiency project in refrigeration sector	Annex 1:
Thailand	220,000	15,400	12-18	Preparation of Kigali Implementation Plan Stage I	Annex 2-A
Thailand	90,000	6,300	12	Preparation of Stage III HPMP	Annex 2-B
Thailand	80,000	5,600	12	Preparation of Investment Projects in Commercial Refrigeration Sector Plan	Annex 2-C
Viet Nam	30,000	2,100	12-18	Preparation of energy efficiency project in air-conditioning sector	Annex 3-A
Viet Nam	100,000	7,000	24	Development of Lifecycle Management Plan for Controlled Substances	Annex 3-B
Total	**550,000**	**38,500**			

Annex 1: Request for project preparation of energy efficiency project for Malaysia

Title: Project preparation for enhancing energy efficiency in Malaysia's commercial refrigeration sector while transitioning to low-GWP alternative refrigerants.

Objective: Improve energy efficiency by 20 to 40% in stand-alone commercial refrigeration in Malaysia in parallel with complete HFC phaseout in the subsector.

Context: Malaysia's Stage I Kigali Implementation Plan proposes total phaseout of HFC-134a and R-404A in the commercial refrigeration subsector of stand-alone units. Malaysia has put forward a request for MLF support to convert the two largest, eligible commercial refrigeration manufacturers, Berjaya Steel and Zun Utara and for TA to guide the remaining sector towards safe use of low-GWP alternatives and to inform the preparation of a sector ban of HFCs. Both of the refrigeration companies are considered small and medium size enterprises and have basic capacity in terms of technology. Although a number of their customers do prefer energy performing equipment, their products are largely based on fixed speed compressors which limits the extent to which companies can improve energy performance.

Additional climate benefits on top of the nearly 200,000 tCO_2 eq. in reductions that are targeted by the KIP are possible if manufacturers and importers market commercial refrigeration units with variable speed/inverter compressor technology. Because stand-alone refrigeration units such as freezers and display cases run 24 hours a day, there is large potential for significant energy savings and CO_2.
HFC phaseout in the sector is also likely to be more sustainable if companies can design and assemble their own HFC-free, inverter products rather than rely on designs and technologies in the EE market that still is dominated by HFC-based compressors.

Concept for Improving EE in Stand-alone Commercial Refrigeration: The proposal intends to introduce a dual approach of strengthening energy performance policy on stand-alone refrigeration and technical and investment support to the Malaysian-owned manufacturers to increase their production share of energy efficient units (beyond the refrigerant).

The two companies will be supported to first select one of two pathways towards improving the energy performance in their products. The pathway chosen would dictate the type of technology transfer and capacity building needed. The technology support would allow the enterprises to design systems to effectively use and optimize inverter, hydrocarbon (R-290) based compressors, including how to program controls and install and repair the inverter box. The latter would reduce operating cost to consumers, which will make inverter commercial refrigeration equipment become more attractive. Expected project costs will be chiefly related to this technology transfer and capacity building. Only a small amount of investment would be likely required which will be confirmed during project preparation.

In order to quantify the CO_2 benefits accrued from the support to the two manufacturers, the project would cover the costs of testing the energy performance of the companies' existing products. This would become the baseline against which to measure the energy savings from the new equipment post-project.

To scale up climate benefits possible from the use of variable speed compressors, the proposed EE project would pursue the development and introduction of policy and standards that promote uptake of high energy efficient compressors in the subsector and create the enabling environment for uptake of more efficient, greener technology thereby supporting Malaysian-owned manufacturers. In order to understand how ambitious a minimum energy performance standard could be at the onset; the project would include a market assessment of the current average EE and refrigerant used of units (freezers and display cases) marketed in Malaysia. Moreover, the study would

assess other opportunities for EE improvement in the context of HFC phasedown, most notably in the MAC sector which is also targeted by the KIP in the form of a pilot project to phaseout HFC-134a.

Project preparation support: Preparation will determine what is required to help the companies design more efficient units and source requisite parts. Preparation work will also lead to an estimated amount of CO2eq. in additional benefits that can be accrued. The actual target would be confirmed in project implementation subsequent to 1) testing enterprise products and 2) assessing the average energy performance of stand-alone, plug-in units in the Malaysian market.

Preparation Budget for EE Improvement in Stand-alone Commercial Refrigeration

Activity	Planned Budget (US$)
Capacity needs assessment of two enterprises and EE regulators (incl. travel)	10,000
Consultations with technology providers/suppliers in the Region (incl. travel)	5,000
Design and development of the proposal, including determination of source of technology and know-how	15,000
Total	**30,000**

Annex 2-A: Request for project preparation of Kigali Implementation Plan for Thailand

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL
KIGALI-HFC IMPLEMENTATION PLAN (KIP) PROJECT PREPARATION (PRP)
KIP (OVERARCHING + INV)

Part I: Project information

Project title:	**Thailand Kigali HFC Implementation Plan Preparation**	
Country:	**Thailand**	
Lead implementing agency:	**World Bank**	
Implementation period for stage I of the KIP:	**January 2024 – June 2025**	
Duration of PRP implementation (i.e., time (in months) from the approval of PRP to submission of the KIP (please specify): 18		
Funding requested:		
Agency	**Sector**	**Funding requested (US $)***
World Bank	**Overarching**	**220,000**

Part II: Prerequisites for submission

Item	Yes	No
1. Official endorsement letter from Government, indicating the specifying roles of respective agencies (where more than one IA is involved)	☒	☐
2. Ratification of the Kigali Amendment by Thailand	☐	☒
If **NO**, please provide explanation: • Thailand is in the final stage of ratification of the Kigali Amendment. The ratification process was delayed due to change in the government but is now back on track and expected by December.		

A. Information required for PRP funding request for the overarching strategy of the KIP

1. Montreal Protocol compliance target to be met in ☐ stage I of the KIP			
Phase-out commitment (%)	**Freeze 10% reduction**	**Year of commitment**	**2024 2029**
☐ **Servicing only**		☐ **Manufacturing only**	☒ **Servicing and manufacturing**

2. Brief background/description/information on approved relevant projects and multi-year agreements as follows:

- The current progress in implementation of any funded HFC-related project (enabling activities or stand-alone HFC investment projects)
- The current progress in ongoing HCFC phase-out management plan (HPMPs)
- Consideration of integrating HFC phase-down activities with HPMP activities taking into account previously approved HFC-related projects, if this information is available.

Thailand received MLF approval for its enabling activity funds in late 2017 to help guide it through the ratification of the KA, and initial monitoring and reporting obligations pertaining to HFCs. Also in 2017, it was awarded a Kigali-Cooling Efficiency Program (K-CEP) grant through the World Bank to develop a national cooling plan, but which integrated review, analysis and recommendations on alternatives to HCFCs and HFCs as refrigerant and on energy efficiency (EE) in the refrigeration and air-conditioning (RAC) sector. HFC Thailand enabling activities was completed in 2022. The recommendation package for Kigali Amendment ratification has already been submitted to Permanent Secretary of the Ministry of Industry for the consideration of the new Minister. The new Minister of Industry will assume her position after the new Government announces its policy to the parliament on September 8. With the approval of the Minister of Industry, the recommendation will be

forwarded for the consideration of the Cabinet. Thailand expects to deposit its ratification instrument by December 2023.

Thailand embarked on Stage I HCFC Phaseout Management Plan (HPMP) in 2013 that focused on enterprises in the foam sector (except spray foam) consuming bulk HCFC-141b and Thailand's important air-conditioning manufacturing sector, HCFC-22. Through the Stage I HPMP, Thailand committed to reduce its consumption of HCFCs within the baseline level by 2013 and reduce its consumption further to the level not exceeding 90% of the baseline level by 2015, and 85% of the baseline level by 2018. Implementation of the Stage I HPMP was completed in 2018 and all the commitments were achieved. The Stage II HPMP addressing the remaining consumption of HCFC-141b in the spray foam sub-sector and consumption in the refrigeration and air-conditioning sectors, was submitted and approved by the MLF ExCom. Implementation of the Stage II HPMP started in 2020 and still on-going. The objectives of the Stage II HPMP is to sustain the consumption level achieved by the Stage I HPMP and further reduce the consumption to not more than 355 ODP tons by 2023. Thailand has submitted project preparation for the Stage III HPMP to the 93rd ExCom to enable Thailand to completely phase-out HCFCs by 2030, except for those allowed for a servicing tail between 2030 and 2040, where required, consistent with the provisions of the Montreal Protocol/

3. Overview of current HFC consumption in metric tonnes by substance (last three years)

Substance/blend	Sector	2020	2021	2022
HFC-23	Fire suppression	3.89		
HFC-32	RAC manufacturing and/or servicing	7,877.80		
HFC-43-10mee	Solvent	4.63		
HFC-125	Fire suppression	39.32		
HFC-134a	RAC manufacturing and servicing	6,067.43		
HFC-152a	Others	3.60		
HFC-227ea	Fire suppression	17.50		
HFC-236fa	Fire suppression	6.60		
HFC-245fa	Foam	392.08		
HFC-365mfc	Foam	0.92		
R-404A	RAC manufacturing and/or servicing	568.49		
R-407C	RAC manufacturing and/or servicing	147.80		
R-407F	RAC manufacturing and/or servicing	12.17		
R-407H	RAC manufacturing and/or servicing	2.21		
R-410A	RAC manufacturing and/or servicing	6,853.40		
R-415B	RAC manufacturing and/or servicing	225.65		
R-448A	RAC manufacturing and/or servicing	36.16		
R-452A	RAC manufacturing and/or servicing	6.91		
R-454A	RAC manufacturing and/or servicing	0.33		
R-454B	RAC manufacturing and/or servicing	0.48		
R-454C	RAC manufacturing and/or servicing	0.32		
R-507A	RAC manufacturing and/or servicing	18.42		
R-508B	RAC manufacturing and/or servicing			
R-513A	RAC manufacturing and/or servicing	0.76		

4. Based on the consumption data given above, please provide a description of the sector/sub-sector that use HFCs in the country, including a short analysis and explanation of the consumption trends (i.e., increasing or decreasing)

HFC consumption in Thailand is mainly in the AC and refrigeration sectors including residential AC, building chiller, mobile AC, commercial and domestic refrigeration sectors. Only small quantities are consumed in the foam, solvent, aerosol, and fire protection industries.

- Thailand is a major manufacturing hub for residential ACs. These manufacturers are multinational and national companies. The main HFCs used in residential ACs are HFC-32 and R-410A with increasing preference to HFC-32. This is a significant shift from R-410A which was the main alternative to HCFC-22 till 2015.
- The total production of domestic refrigerators in Thailand is estimated at 7-8 million units per annum of which about 2-3 million is sold to meet the domestic demand with remaining sold in the export market. HC-600a is fast replacing HFC-134a as preferred refrigerant for domestic refrigerators and freezers.

- Thailand is also a major hub of automobile manufacturing to serve the domestic and export markets. Cars, vans and buses, pick-up trucks, and large trucks, are manufactured and exported from the country. The annual production of vehicles is more than two million of which, cars and small pick-up trucks make up a major share.
- The commercial refrigeration sector comprises many type of equipment and refrigeration system for various applications such as retail market, cold chain, food and industrial processing. The major manufacturers are mainly local players providing design, engineering, installation and servicing support.
- PU foam sector has converted from HCFC-141b mainly to cyclopentane with some opting for HFC-245fa, HFC- 365mfc/HFC-227ea blend, HFOs, and water blown technology in certain applications.
- Fire protection systems are either fixed or portable type. Fixed fire protection systems installed in Thailand use HFC-227ea (FM-200) along with CO2. Besides, HFC-236fa, HFC-125 and HFC-134a are used as fire suppression agents in portable type fire protection equipment.

5. Description of information that needs to be gathered during project preparation. Explain how this data will be gathered

Information needed	Description	Agency
Data on HFC consumption in manufacturing/servicing sector	Update Thailand HFC survey – inclusion of actual 2021 – 2023 HFC consumption and sectoral consumption. Analyze the impact of COVID-19 pandemic that may depress the demand of HFCs and HFC-based equipment during the baseline years (2020 – 2022), resulting in a lower HCFC baseline than the previous estimate. Update HFC consumption projections for the immediate period (2024 – 2029) to assess potential compliance risk once demand returns to normal post COVID-19 pandemic.	World Bank
HFC sectoral consumption information		
Analysis of types of equipmentt using HFCs		
New information on ODS regulations		

6. Activities to be undertaken for project preparation and funding (decision 87/xx(b))

Activity	Indicative funding (US $)	Agency
1. Import and export control		
1.1 Review of the national licensing and quota system to monitor and control the consumption of HFCs and HFC blends. Development of options in alignment with the preparation of the HFC phasedown strategy.	20,000	World Bank
1.2 Capacity building activities related to import/export licensing system including Customs and importers/exporters. Assistance in the development of options as necessary.	10,000	World Bank
2. Data collection and analysis		
2.1 Data collection by sector/sub-sector/HFC substance (2019-23)	50,000	World Bank
2.2 Stakeholder consultation: conducting interviews, organizing workshops and stakeholders' consultations on ODS alternatives and for the integration of national regulations and procedures for KA implementation and coordination of technical capacities in the institutions involved in HFC control	25,000	World Bank
2.3 Data analysis and development of BAU and growth modeling scenarios, sensitivity analysis, review of feasible options along with preparation of a related technology roadmap reflecting current and future HFC alternatives	25,000	World Bank
3. Development of overarching strategy		
3.1 Review and development of implementing policies and approaches as relevant and in the context of Vietnam's forthcoming national plan on the management and disposal of controlled ODS and GHGs, including inter-ministerial/agency and institutional arrangements for HFC phasedown.	10,000	World Bank
3.2 Development of the overarching strategy for the phase-down of HFCs and plan of action for stage I of the KIP to address the freeze and 10 per cent reduction in HFC consumption. HFC phase-down strategy development: Technical and legal experts to prepare all legal and technical documents; and if necessary, recommendations for update of institutional arrangements; consult all key stakeholders and develop detailed strategy.	50,000	World Bank

3.3 Development of and integration of the strategy for the phase-down of HFCs focusing on refrigeration servicing sector into the overarching strategy.	20,000	World Bank
4. Outreach and communication		
4.1 Preparation of a comprehensive communication and outreach plan in consultation with key stakeholders.	5,000	World Bank
4.2 Consultation with relevant stakeholders to identify challenges and conduct need assessment for development of outreach and communication methodology for the servicing sector.	5,000	World Bank
TOTAL	**220,000**	

7. How will activities related to preparing the KIP be linked to the current stages of the HPMP being implemented in the country? (OPTIONAL)

It is expected that there will be opportunities for synergies between the HPMP and the KIP, particularly in refrigeration and air-conditioning sectors that use both HCFCs and HFCs. Previous measures from the HPMPs in these sectors such as capacity building for technicians, can be integrated to a certain extent. However, there are other sectors that only use HFCs such as in the mobile air-conditioning and domestic refrigeration that were not addressed in the HPMPs. Moreover, integration of best practices in installed equipment maintenance related to energy performance was also not covered. Thus, the Kigali Implementation Plan will be broader and more complex undertaking than HCFC phase-out.

8. How will the Multilateral Fund gender policy be considered during project preparation?

The Royal Thailand Government is aware of the Multilateral Fund gender policy contained in ExCom document 84/73, and the related Executive Committee decision 84/92. The project preparation will aim to advocate the importance of gender-responsive actions and provisions in developing the Kigali Implementation Plan. Relevant stakeholders will be sensitized on the gender policy and efforts will be made to encourage female stakeholders to contribute to the project preparation. To the extent possible, a gender-disaggregated data will be collected.

Annex 2-B: Request for project preparation of Stage III HPMP for Thailand

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL
HPMP PROJECT PREPARATION REQUEST FORM
HCFC PHASE-OUT MANAGEMENT PLAN (OVERARCHING STRATEGY)

Part I: Project Information

Project title:	**Project Preparation Request: Thailand HCFC Phase-out Management Plan Stage III (HPMP III)**	
Country:	**Thailand**	
Lead implementing agency:	**World Bank**	
Implementation period:	**12 months**	
Funding requested:		
Agency	**Sector**	**Funding requested (US $)***
World Bank	**Overarching**	**90,000**

Part II: Prerequisites for submission

Item	**Yes**	**No**
3. Official endorsement letter from Government specifying roles of respective agencies (where more than one IA is involved)	☒	☐
4. Written confirmation – balances from previous PRP funding approved for stage I HPMP had been returned / will be returned (d**ecision 71/42(i)**)	☒	☐
• Specify meeting at which PRP funding balance had been returned/will be returned	Not Applicable	

Information required to support PRP funding (Overarching strategy)

Montreal Protocol compliance target to be met in ☐ stage II / ☒ stage III of the HPMP			
Phase-out commitment (%)	**100%** (with a servicing tail in line with the MP)	**Year of commitment**	2030
☒ **Servicing only**		☐ **Manufacturing only**	☐ **Servicing and manufacturing**
Brief background on previous stage of the HPMP (i.e., when the HPMP was approved; a description of the progress in implementation of the previous stage of the HPMP to demonstrate that substantial progress had been made.)			
Thailand embarked on its Stage I HCFC Phaseout Management Plan (HPMP) in 2013. It focused on enterprises in the foam sector (except spray foam) consuming bulk HCFC-141b and Thailand's important air-conditioning manufacturing sector consuming HCFC-22. Through the Stage I HPMP, Thailand committed to reduce its consumption of HCFCs to within the baseline level by 2013 and reduce its consumption further to a level not exceeding 90% of the baseline by 2015, and not exceeding 85% of the baseline by 2018. Implementation of the Stage I HPMP was completed in 2018 and all the commitments were achieved. The Stage II HPMP addressing the remaining consumption of HCFC-141b in the spray foam subsector and consumption in the refrigeration and air-conditioning sectors, was submitted and approved by the MLF Executive Committee (ExCom). Implementation of the Stage II HPMP started in 2020 and is ongoing.			
Current progress in implementation of previous stage of the HPMP			
Activity	**Description**		**Implementing agency**

Manufacturing-Foam PU	Conversions in the manufacturing sector are exclusively in the spray foam sector as planned in the Stage II HPMP. Larger enterprises with HCFC-141b consumption of more than 10 MT will have subprojects to change or retrofit foaming machines: five subgrant agreements have been signed and one more is in the works, planned for an estimated US$1.3 million. Smaller enterprises with limited HCFC-141b consumption and capacity are receiving technical support through a workshop on the comparison of each alternative for the spray foam industries, technical know-how on self-blended HFOs and others. Hands-on training on reduced-HFO formulation via the cooperation of the Bank and the main system houses also provided.	World Bank
Refrigeration servicing sector	In the refrigeration and air-conditioning (AC) servicing sector, equipment procurement for training has started after some COVID-19-related delays. Delivery of 72 sets of training equipment for AC service technicians for the 12 selected training centers was completed by June 2022. Two partner training institutes have been engaged in delivering the training to technicians, DSD and OVEC (six centers each). One-hundred two (102) out of 229 training sessions were completed by the 12 training centers. A total of 1,860 technicians received training from the DSD and OVEC training centers.	World Bank
Legal/regulatory framework	Preparation of the notification to ban HCFC-141b is ongoing and planned to be enacted by the end of 2023, as per ExCom Decision 82/60(b)(ii) to prevent diversion and zero consumption of HCFC-141b in all applications.	World Bank

Overview of current HCFC consumption in metric tonnes by substance (last three years)

Substance	Sector	2019	2020	2021
HCFC-22	Manufacturing-REF	120.36	34.18	34.18
HCFC-22	RAC servicing	5,013.64	5,348.91	5,308.55
HCFC-123	Manufacturing-AC	16.50	6.50	6.50
HCFC-123	RAC servicing	120.00	35.00	112.50
HCFC-141b	Manufacturing-Foam PU	115.00	153.27	153.27
HCFC-141b	Solvent	429.00	388.91	194.00
HCFC-227	Solvent	38.14	4.00	-

Based on the consumption data given above, please provide a description of the sector/sub-sector that use HCFCs in the country, including a short analysis and explanation of the consumption trends (i.e., increasing or decreasing)

HCFC consumption for manufacturing has dropped significantly after completion of Stage I which focused on the foam sector (except spray foam) consuming bulk HCFC-141b and the air-conditioning manufacturing sector. Remaining HCFC consumption for manufacturing is in the refrigeration sector and is expected to further drop as the sector started moving to HFCs, although it is believed that several companies using R-22 remain. Consumption of HCFC-141b in foam and solvent sectors have been on a decline with ongoing activities in spray foam and in part due to the signals received by the industry on the inevitable bans in 2023. The bulk of remaining HCFC consumption is HCFC-22 for the servicing sector as well as possibly up to the 12 small commercial refrigeration manufacturers identified in Stage II preparation.

Description of information that needs to be gathered and updated. Explain why this has not been undertaken during preparation for the previous stage of the HPMP.

Information needed	Description	Agency
Updated data on HCFC consumption in manufacturing/servicing sector	To better assess the type/size of typical providers, nature of work and options/readiness for introduction of climate-friendly, potentially flammable replacements. To revisit the commercial refrigeration manufacturing sector where some remaining HCFC consumption may exist.	World Bank
Analysis of the types of equipment using HCFCs	To estimate needs for servicing tail after 2030	World Bank
Updated sectoral consumption information	The Stage III HPMP will review and address the use of HCFCs in the solvents sector	World Bank
New information on ODS regulations	A review of existing rules, any updates and any need for updates or modifications	World Bank
Explore the need for continuity and further capacity strengthening for functional agencies in controlled substances management	To better manage the controlled substances by competent and functional agencies like customs, import-export management agencies and other relevant stakeholders	World Bank

Activities to be undertaken for project preparation and funding

Activity	Indicative funding (US $)	Agency
Data updates, reconciliation, and analysis	45,000	World Bank
Technology and servicing needs assessment	20,000	World Bank
Stakeholder workshops (2) and consultations and associated travel	15,000	World Bank
Policy and institutional framework review, including aspects related to gender, and actions needed if any	10,000	World Bank
TOTAL	**90,000**	

How will activities related to implementation of the Kigali Amendment to phase down HFCs be considered during project preparation for stage III of the HPMP?

Efforts will be undertaken to coordinate activities in servicing subsectors such as air-conditioning and commercial refrigeration that may use both HCFCs and HFCs. During preparation, survey data from the KIP preparation will be compared to that collected/updated under the HPMP to better identify consumption and use patterns in the servicing sector of the different types of refrigerants as well as to assess and understand supply and distribution channels beginning with imports to end-users and service shops. Efforts will be made in training and awareness workshops and other events to provide consistent messaging on phaseout and phasedown requirements.

How will the Multilateral Fund gender policy be considered during project preparation?

In Stage III preparation, first an assessment will be made of how gender was addressed in Stage II, lessons learned and results if any given that the MLF policy was adopted after the Stage II project was prepared and launched. The data update and collection period will be an opportunity to establish the starting point for measuring progress in integrating gender considerations. A WB gender specialist will be included in the preparation team to determine how to integrate gender into the project in accordance with the WBG gender policy and that of the MLF and to work with the government on incorporating practicable measures and indicators into the project design.

Annex 2-C: Request for project preparation for investment projects in commercial refrigeration sector for Thailand

A. PRP funding request for investment projects in commercial refrigeration

1. Agency:	World Bank
2. Sector:	Refrigeration
3. HCFC consumption in item #2 reported under country programme data?	☐ **Yes**, please specify reported amount and year: ☒ **No** The enterprises' HCFC consumption to be phased out will be determined during the preparation of the investment project. The country has been reporting HCFC consumption as servicing consumption absent of a detailed survey (to be done under the HPMP III overarching preparation support)
4. Does the enterprise commit to phase out the HCFC consumption associated with the proposed investment project, if approved by the Executive Committee?	☒ **Yes**, please provide support letter ☐ **No**
5. If the project preparation is requested in advance of the HPMP, did the Government provide a written commitment that the consumption associated with these investment projects, once approved, will be deducted from the country's starting point, once established?	☐ **Yes** ☒ **No** Investment project/sector plan will be submitted as part of the final Stage III HPMP.
6. Please explain briefly how the investment project would relate to the overarching strategy for the country, and when the final HPMP will be submitted	Complete conversion of remaining manufacturing will allow Thailand to permanently ban all manufacturing and imports of HCFC-based products and assist it to slow demand for HCFC in servicing as it moves to complete phaseout.

7. Information on sector consumption (specify previous year HFC consumption)

Substance	**Consumption (metric tonnes)**
Others, specify.	HCFC-22 TOTAL CONSUMPTION IN 2022: 4,100.55 MT

8. Information on enterprise(s) for which funding is being sought

Enterprise	**Year established**	**HCFC consumption (metric tonnes) (last three years)**			**HCFC phase-out to be achieved (metric tonnes and CO_2-eq. tonnes)**
		2020	**2021**	**2022**	
Up to 12 SMEs* The combined R-22 consumption is expected to be low due to the size of these companies.	Prior to Sep. 2007	TBD	TBD	TBD	TBD

9. Activities to be undertaken for preparation of the investment project and funding requested		
Activity	Indicative funding (US $)	Bilateral/implementing agency
Prepare investment group conversion project for up to 12 enterprises manufacturing commercial refrigeration equipment to convert from HCFC-22 refrigerant to hydrocarbons	80,000	World Bank
TOTAL	**80,000**	

*In the event that a lower number of enterprises are identified, preparation funding will be returned in accordance with Decision 56/16(f) on the funding scale for the number of enterprises in manufacturing.

Annex 3-A: Request for project preparation of energy efficiency project for Viet Nam

Title: Project preparation for enhancing energy efficiency in Viet Nam's air-conditioning sector while transitioning to low-GWP alternative refrigerants.

Objective: Improve energy efficiency by 10 to 20% in split-type air-conditioning equipment in Viet Nam in parallel with complete HFC phaseout in the subsector.

Context: Room AC is also the top energy consuming equipment in the residential sector in Vietnam. Room AC, with an estimated stock of 16 million units in 2020, accounted for 30%. While energy consumption for ACs is high in the residential sector, it is even higher in the commercial and industrial sectors. AC systems consume 45% of total electricity used in office buildings, 41% of total electricity used in supermarkets, and 42% in hotels.

There are currently three air-conditioner manufacturers in Vietnam, including two multinational companies and one locally owned manufacturer. The local company, Nagakawa, restarts AC production in 2023 after a few years pause to modernize its factory to comply with new safety regulations. Nagakawa, however, can only make fixed speed R-32 models as it currently lacks capacity to make inverter units. Fixed-speed room AC is simple to design and manufacture because the marketplace is highly commoditized with components that are easy to obtain and integrate into an operational AC system. For inverter-based room AC systems it is necessary to integrate sensors, signal conditioning, analog-to-digital converters and computational programming into the electronic controllers for each model. In addition, the local companies cannot fix the inverter circuit board and can only replace with new one leading to growing problems of electronic waste These barriers have entrenched local manufacturing in fixed speed AC production and further exacerbates competitiveness of local manufacturing, as witnessed particularly in Vietnam.

In Vietnam, the MEPS and labeling scheme are in place since 2011 and are mandatory for a range of products, including air conditioners. They include the comparative label (up to five stars) and endorsement label (which is recognition that the equipment has an EE level that reaches or exceeds the highest energy performance standard). Vietnam's approach is considered "technology neutral," in that it does not provide two sets of MEPS for fixed-speed and more efficient inverter AC. The MEPS for AC have been revised only once in 2015 though market data however shows that its current MEPS levels are low and not reflective of the actual market. The MEPS levels have not been updated in eight years and there is no strong legal basis for a continuous review and improvement, meaning there is no obligation nor resources for regulators to update MEPS levels.

Concept for Improving EE in Split-type Air-Conditioner: The proposal intends to introduce a dual approach of strengthening energy performance policy on split-type AC and technical and investment support to the Viet Nam-owned manufacturer to increase their production share of energy efficient units.

To scale up climate benefits possible, the proposed EE project would pursue the development and introduction of policy and standards to increase MEPS that promote uptake of inverter-based room AC and create the enabling environment for uptake of more efficient, greener technology thereby supporting Viet Nam-owned manufacturers. In order to understand how ambitious a minimum energy performance standard could be at the onset; the project would include a market assessment of the current average EE and refrigerant used of room AC marketed in Viet Nam. Moreover, the study would assess other opportunities for EE improvement in the context of HFC phasedown.

Project preparation support: Preparation will determine what is required to help Nagakawa design and service more efficient units while reducing electronic waste. Preparation work will also lead to an estimated amount of CO2eq. in additional benefits that can be accrued. The actual target would be confirmed in

project implementation subsequent to 1) testing enterprise products and 2) assessing the average energy performance of split-type AC units in the Viet Nam market.

Preparation Budget for EE Improvement in Split-type AC

Activity	Planned Budget (US$)
Capacity needs assessment of Nagakawa and EE regulators (incl. travel)	10,000
Consultations with technology providers/suppliers in the Region (incl. travel)	5,000
Design and development of the proposal, including determination of source of technology and know-how	15,000
Total	**30,000**

Annex 3-B: Request for the Development of Lifecycle Management Plan for Controlled Substances for Viet Nam

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL

FUNDING REQUEST FOR THE PREPARATION OF NATIONAL INVENTORIES OF BANKS OF USED OR UNWANTED CONTROLLED SUBSTANCES AND A PLAN FOR THE COLLECTION, TRANSPORT AND DISPOSAL OF SUCH SUBSTANCES, INCLUDING CONSIDERATION OF RECYCLING, RECLAMATION AND COST-EFFECTIVE DESTRUCTION

Part I: Project information

Project title:	**Development of Lifecycle Management Plan for Controlled Substances**
Country:	**Viet Nam**
Lead implementing agency:	**World Bank**
Meeting where request is being submitted	**93rd Meeting**
Implementation period	**2025-2027**
Duration of implementation (i.e., time (in months)) from the approval of PRP to submission of the national inventory and action plan (please specify): 24	
Funding requested:	
Agency	**Funding requested (US $)***
World Bank	**107,000**

*Details should be consistent with information provided in the relevant sections below. Agency support costs included.

Part II: Prerequisites for submission

Item	Yes	No
Official endorsement letter from Government, indicating roles of respective agencies (where more than one IA is involved), and that the national inventory/action plan will be completed within 24 months from the date of project approval	☐	☒
Project included in the bilateral/IA business plan?	☐	☒
If **NO**, please provide explanation: • Endorsement letter will be provided by the week of October 30th (due to DCC travel for MP meetings) • The activity was not included in the 2024-2026 Business Plan as the KIP survey was just starting and it was not certain whether the activity was needed at that time (September 2022).		

Information required for PRP funding request for the national inventories of banks of used or unwanted controlled substances and a plan for the collection, transport and disposal of such substances, including consideration of recycling, reclamation and cost-effective destruction

Brief overview of the the concept, methodology and approach to be taken for the preparation of the national inventory and / or action plan and how it is linked to other activities in the country (i.e., national plans like the KIP), in particular those activities in the refrigeration servicing sector such as recovery, recycling, and reclamation programmes.
The project objective is to develop a life-cycle management plan for reducing demand for and emissions of Montreal Protocol controlled substances and which is financially self-sustaining over time. In order to understand the feasibility of such a plan, the following is needed: i) the amount and type of currently installed controlled substances (i.e. "banks"); ii) the existing flow of and market for refrigerants and fire suppression agents and available infrastructure for tracking, monitoring, recovering and storing these chemicals; iii) the existing regulatory framework and system related to trade in chemicals and to waste management as well as

recovery and recycling of MP controlled substances; iv) models and lessons learned from other countries that have a life-cycle management approach, or elements of an approach in place; v) technical capacity to analyze content and quality of reclaimed materials and purity standards of reclaimed materials required/expected by the market and how to ensure these are achieved; and vi) demand for recovered, recycled controlled substances within Viet Nam and the Region.

After understanding the current situation, the proposed activity will analyze the information and data collected, including estimating future streams (amounts and types of substances) for recovery, reuse or destruction. One of the main objectives will be in fact, to quantify real and sustained reductions in CO2eq. emissions that Viet Nam can claim in its NDC and other climate related strategies and carbon market objectives. Financial analysis, most critically the break-even cost for a viable, self-sustained scheme will be conducted. Design of a scheme, or business model, and required regulation, infrastructure and other investments to make it viable will be done in close consultation with the various stakeholders in the country as well as external players that have already some ideas and experience in the field. In the consultation process, business partnerships and public-private sector cooperation will be promoted. For the latter, linkages to implementation of related activities in the servicing sector under Viet Nam's Stage I KIP and HPMP III will be made as well as to build on/scale-up bilateral work with Japan on recovery and disposal. Recommendations will be formulated to assist the country and stakeholders to institute and implement the proposed life-cycle management plan, building on the country's current import/export/destruction system, and to scale-up recovery, recycling and reuse of controlled substances across MP sectors and possibly across countries.

Description of activities that will be implemented during the preparation of the national inventories/action plans of banks for used and/or unwanted controlled substances and an indication of the estimated costs for the activities described broken down per agency

Activity	Description	Agency
Data collection	Data collection will determine the installed stock of refrigeration and cooling equipment, including estimates on the amount and types of refrigerant used. The focus will be on larger units. Part of data collection will entail research of bankable management models in non-A5 and other A5 countries, and Viet Nam's existing regulatory framework and including the new regulation on ODS and GHG and rules to fulfil obligations under the chemicals conventions (Basel, etc.). The study will also investigate current in-country capacity to analyze quality of recovered and reclaimed materials.	World Bank
Stakeholder consultations	Consultations with importers of controlled substances, major equipment suppliers, associations, waste management and disposal operators, larger servicing shops and authorized dealers and regulators from ministries of industry, environment, energy and finance (Customs). Consultations with companies active in the Region that specialize in recovery, reclamation, disposal and tracing refrigerants and to the extent possible companies engaging in carbon market trading, will also be consulted.	World Bank
Analysis of data collected	Analysis of collected data and modelling of quantities of equipment and controlled substances that will be decommissioned, available for collection over time by type of substance. The focus will also be given to collection options to minimize transaction costs of the R&R and disposal scheme. The break-even cost of R&R and destruction will be	World Bank

	calculated. Assessment of Viet Nam's existing infrastructure and regulatory framework for lifecycle management of controlled substances will be undertaken, including any need for implementation rules of its new Decree No. 06/2022/ND-CP and other provisions of the Law on Environmental Protection.	
Preparation of inventory report/national plan	A lifecycle management plan for controlled substances will be developed to track and manage refrigerants and fire suppression agents from first import through recovery and disposal (including destruction). The starting point for the plan, namely the existing inventory of controlled substances will be described as well as the results of the analysis, financing scheme and additional requirements if any, and recommendations for implementation, including needed infrastructure, facilities and equipment, will be included.	World Bank

Funding for the activities described in 2 above

Activity	Indicative funding (US $)	Agency
Data collection consulting firm	45,000	World Bank
In country stakeholder consultation	15,000	World Bank
Expert time for data analysis	15,000	World Bank
Expert time for designing a viable lifecycle management plan and sustainable business model	20,000	World Bank
Report preparation	5,000	World Bank
TOTAL	**100,000**	

How will the Multilateral Fund gender policy be considered during project preparation?

Relevant stakeholders will be sensitized on gender policy including that of the Multilateral Fund to the degree possible and as relevant. Efforts will be made to encourage female stakeholders to contribute to the inventory and design of the proposed scheme/action plan for managing refrigerants and fire suppression agents and other related controlled substances. To the extent relevant, gender-disaggregated data will be collected (in the consultations and discussions with waste operators for example).