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执行蒙特利尔议定书
多边基金执行委员会
第九十六次会议
2025年5月26日至30日，蒙特利尔
临时议程¹项目9(c)和9(d)

开发计划署2025年工作方案

¹ UNEP/OzL.Pro/ExCom/96/1

基金秘书处的评论和建议

1. 开发计划署请求执行委员会为其 2025 年工作方案核准经费 1,644,458 美元，外加机构支助费用 116,312 美元，如表 1 所列。提交材料附于本文件之后。

表 1：开发计划署 2025 年工作方案

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：延长机构加强项目			
孟加拉国	延长机构加强项目（第十一期）	344,448	344,448
巴西	延长机构加强项目（第十期）	930,010	930,010
A1 小计		1,274,458	1,274,458
机构支助费用		89,212	89,212
A1 共计		1,363,670	1,363,670
A2：基加利氢氟碳化物执行计划（KIP）投资项目的项目准备			
菲律宾	泡沫制造行业 KIP 投资项目的准备	80,000	80,000
A2 小计		80,000	80,000
机构支助费用		5,600	5,600
A2 共计		85,600	85,600
A3：在根据第 91/65 号决定逐步减少氢氟碳化物的背景下准备一个维持和/或提升替代技术和设备的能效的试点项目²			
加纳	准备一个独立式商业制冷中维持和/或提升能效的试点项目	30,000	30,000
A3 小计		30,000	30,000
机构支助费用		2,100	2,100
A3 共计		32,100	32,100
A4：编写氟氯烃消费量核查报告的技术援助			
海地	氟氯烃淘汰管理计划第二阶段核查报告	30,000	30,000
摩尔多瓦共和国	氟氯烃淘汰管理计划第三阶段核查报告	30,000	30,000
A4 小计		60,000	60,000
机构支助费用		5,400	5,400
A4 共计		65,400	65,400
B 部分：建议单独审议的活动			
B1：为最终用户准备一个能效滚动基金（第 95/87 号决定）			
全球（哥伦比亚、加纳和约旦）	为旅游行业的最终用户准备一个滚动基金	200,000	*
B1 小计		200,000	*
机构支助费用		14,000	*
B1 共计		214,000	*
A1、A2、A3、A4、B1 共计		1,644,458	1,444,458
A1、A2、A3、A4、B1 的机构支助费用		116,312	102,312
总计		1,760,770	1,546,770

* 建议单独审议

² 此处指为维持和/或提升能效的试点项目的准备

A 部分：建议一揽子核准的活动

A1：延长机构加强项目

项目说明

2. 开发计划署为表 1 的 A1 部分所列的国家提出延长机构加强项目的申请。这些项目的说明载于本文件附件一。

秘书处的评论

3. 秘书处根据有关合格性及供资水平的准则³和相关决定审查了两个机构加强项目的延长申请。根据前一期的原始工作计划、国家方案和第 7 条数据、氟氯烃淘汰管理计划（HPMP）执行情况的最新报告、相关机构的工作进展报告和缔约方会议的任何相关决定，对这些申请进行了核对。注意到这两个国家已提交了 2023 年国家方案数据和第 7 条数据，并遵守了《蒙特利尔议定书》规定的控制目标，其报告的年度氟氯烃消费量未超过其与执行委员会签订的氟氯烃淘汰管理计划的协议规定的年度最大允许消费量。此外，根据第 91/63 号决定(b)段，提交的两份申请都包括对绩效指标、项目风险和可持续性以及机构加强目标实现情况的评估。

秘书处的建议

4. 秘书处建议按照本文件表 1 的 A1 部分所示的供资水平一揽子核准孟加拉国和巴西延长机构加强项目的申请。执行委员会不妨告知上述政府在本文件附件二中提出的意见。

A2：基加利氢氟碳化物执行计划（KIP）投资项目的项目准备

项目说明

5. 开发计划署为一个国家提交了聚氨酯泡沫行业 KIP 第一阶段投资项目准备的申请，如表 1 的 A2 部分所示。

6. 开发计划署作为指定执行机构，介绍了在菲律宾准备 KIP 投资项目所需的活动。项目准备申请纳入的活动涉及到氢氟碳化物消费量数据收集、潜在受益企业的替代品、供应链评估、与企业磋商和实地考察、KIP 投资项目提案的完成以及利益相关方核证。

秘书处的评论

7. 秘书处在审查该请求时，考虑了第 87/50 号决定所载的 KIP 准备准则、为项目准备提议的活动以及这些活动与该国的扶持活动和其他氢氟碳化物相关项目的联系。秘书处注意到，该国已经批准了《基加利修正案》；该国政府提供了支持项目准备的认可函；并且申请的供资也符合第 87/50 号决定。

³ 第 91/63 号决定：(b) 核准机构加强供资最终报告和延长申请的修订格式以及相应的绩效指标；以及 (c) 请第 5 条国家通过双边和执行机构，自执行委员会 2023 年第一次会议起，为所有机构加强延长请求使用上文 (b) 分段提及的修订格式。

8. 秘书处进一步注意到，泡沫制造行业 KIP 投资项目的项目准备申请确定了 15 个潜在的中小制造企业，其平均消费量为 14.21 公吨（14,673 二氧化碳当量吨）的 HFC-245fa，主要是硬泡应用。第九十一次会议核准了菲律宾 KIP 第一阶段总体战略编制的供资，额度为 22 万美元，外加开发计划署的机构支助费用，这是收到的该国第一份 KIP 投资项目准备的申请。秘书处告知开发计划署，在 KIP 第一阶段下为 15 个或更多企业准备投资项目的最高资金限额为 15 万美元，而菲律宾 KIP 投资项目准备的最高资金限额为 20 万美元。⁴ 开发计划署证实，该国为此项目准备申请了 8 万美元。如此申请获得核准，则该国 KIP 第一阶段投资项目准备还将剩余 12 万美元的合格量。

9. 经询问，开发计划署确认，泡沫制造行业项目将作为将在第九十七次会议上提交的 KIP 第一阶段的一部分予以提交。

秘书处的建议

10. 秘书处建议按照表 1 的 A2 部分所示的供资水平一揽子核准菲律宾基加利氢氟碳化物执行计划第一阶段下泡沫制造行业投资项目的准备。

A3：在逐步减少氢氟碳化物的背景下准备一个维持和/或提升替代技术和设备的能效的试点项目（第 91/65 号决定）

项目说明

11. 开发计划署作为指定执行机构，提交了一份在加纳维持和/或提升替代技术和设备的能效的试点项目准备申请，如表 1 的 A3 部分所示。根据第 91/65 号决定作了提交。

12. 试点项目旨在用 R-290 单体（替代中小容量机组）和二氧化碳冷凝机组（大容量）替代 4 个商业冷库中目前使用的氢氟碳化物冷凝机组中的 R-404A 和 R-507A，以证明这些替代品是氢氟碳化物冷凝机组的节能环保替代品。

13. 项目准备将开发一个试点项目，替代南部地区和北部地区各两台氢氟碳化物冷凝机组。准备活动包括评估冷库改造使用碳氢单体和二氧化碳机组的可行性，预估子行业的规模，根据设定的标准选择受益方，咨询技术专家来设计试点项目，会见潜在受益方和利益相关方，并完成项目提案。供资申请将涵盖聘请国际和国内专家（25,600 美元）以及差旅费和其他费用（4,400 美元）。

秘书处的评论

14. 秘书处根据第 91/65 号决定规定的标准审查了项目提案，并注意到该申请属于 (b)(i)c 分段关于大型商业和工业制冷、空调和热泵设备的装配和安装活动的范围。⁵ 该试点项目将向商业冷库终端用户推行节能和低全球升温潜能值（GWP）技术，并在其他终端用户中传播设备操作和维护方面的成果和经验教训，从而应对市场接受度方面的挑战。

⁴ 第 87/50 号决定(f)段

⁵ 涉及到设备组装和安装的技术援助的、在从氢氟碳化物改造过程中可促成采用维持和/或提升能效的、在该国或地区展示出可复制性和可推广性的项目将被优先考虑。

这将有助于节能和低 GWP 制冷剂技术在该国更广泛地渗透。

15. 秘书处注意到，在第九十三次会议核准的加纳 KIP 项目下，⁶ 包括了一个开展两个试点项目的组成部分，以展示独立式商业制冷子行业的 R-290 单体技术。在被问及提议的项目与 KIP 下核准的项目之间的区别时，开发计划署解释称，KIP 下核准的试点项目侧重于展示用于超小型商业制冷设施的 R-290 单体技术，例如超市的冷藏陈列柜。提议的项目针对是大得多的含氢氟碳化物的商业冷库，旨在展示用于大型设施的替代技术，特别是 R-290 和二氧化碳技术，并宣传节能和低 GWP 技术的益处。这种方法不仅可以解决氢氟碳化物消费量高的问题，还可以为其他用户和气候条件类似的国家提供关于产品性能、操作和维护的宝贵见解。

16. 考虑到开发计划署在没有准备资金的情况下实施了类似项目，而且此类数据也可从 KIP 调研中获得，因此秘书处询问了是否有必要开展准备项目。开发计划署作了澄清，称准备项目是必要的，以评估子行业的规模，确定适合的冷库进行改造，教育最终用户逐步减少氢氟碳化物，并进一步制定涵盖选定冷库的项目提案、详细的实施计划、试点项目预期的氢氟碳化物削减量以及受益方的节能惠益。

17. 秘书处注意到，开发计划署为这一项目准备提交了 61,000 美元的申请，用于第 13 段中述及的活动。但经过进一步讨论，考虑到活动范围和 KIP 调研可获得的数据，开发计划署同意将开发这一试点项目的申请额度调整为 3 万美元。

秘书处的建议

18. 秘书处建议按照表 1 的 A3 部分所示的供资水平一揽子核准在逐步减少氢氟碳化物的背景下在加纳准备一个维持和/或提升替代技术和设备的能效的试点项目。

A4: 编写氟氯烃消费量核查报告的技术援助

项目说明

19. 根据第 61/46 号决定(c)段，⁷ 秘书处抽取了 12 个低消费量第 5 条国家的样本，以核实其遵守氟氯烃淘汰管理计划（HPMP）协议的情况。选出的国家列于 UNEP/OzL.Pro/ExCom/96/16 号文件项目审查期间所查明问题概览之表 5。开发计划署作为牵头/指定执行机构，正在为海地 HPMP 第二阶段（取决于提交本次会议的 HPMP 第二阶段的核准情况）以及摩尔多瓦共和国 HPMP 第三阶段的核查申请资金。

秘书处的评论

20. 秘书处注意到，供资申请与前几次会议上为类似核查核准的资金一致，并进一步指出，核查报告必须在为 HPMP 申请下一次供资付款所相关的执行委员会会议召开前至少 10 周提交。

⁶ 第 93/62 号决定

⁷ 要求秘书处在每年第一次会议上提供一份代表 20% 的氟氯烃消费基线最高至 360 公吨且 HPMP 得到核准的国家的名单，以核准对它们的供资，目的是核查该国该年度遵守 HPMP 协议的情况。

秘书处的建议

21. 秘书处建议按照表 1 的 A4 部分所示的供资水平一揽子核准编写摩尔多瓦共和国氟氯烃淘汰管理计划（HPMP）第三阶段以及海地 HPMP 第二阶段的核查报告的技术援助，但有一项谅解，即核查报告必须在为 HPMP 申请下一次供资付款所相关的执行委员会会议召开前至少 10 周提交。

B 部分：建议单独审议的活动

B1：为最终用户准备一个能效滚动基金（第 95/87 号决定）

项目说明

22. 开发计划署提交了一份全球项目的项目准备申请，目的是为三个国家的最终用户建立能效滚动基金，以便在旅游行业加速转型至高效、可持续的制冷，如表 1 的 B1 部分所示。根据第 95/87 号决定(g)段作了提交。⁸

23. 下文表 2 列出了提议实施能效滚动基金的三个国家的概览。

表 2: 提议实施能效滚动基金的国家的概览

详情		哥伦比亚	加纳	约旦
政府认可函		是	是	*是
氢氟碳化物基线（二氧化碳当量吨）		8,652,982	1,805,702	2,808,101
维修行业 2023 年氢氟碳化物消费量**	公吨	2,417	380	549
	二氧化碳当量吨	5,137,270	715,041	960,561
核准 KIP 的会议		95	93	93
先前实施能效滚动基金的经验		是	是	是
提议通过滚动基金覆盖的行业 ***		酒店和度假村、制冷维修中的中小企业、旅游供应链、技工和维修供应商以及超市和零售企业的制冷空调应用		
申请的准备资金（美元）		200,000		

* 收到了一份正式来文。

** 国家方案执行情况报告

*** 行业详情和优先次序将在项目准备期间着手落实。

24. 开发计划署的蒙特利尔议定书科将与其可持续金融中心密切合作，牵头进行项目实施。可持续金融中心将提供广泛的技术和运行支持，并在设计、实施和开展金融监督方面提供经验。由于项目将涉及通过国家金融机构资助受益方，开发计划署将通过其国家办公室与被确定负责项目实施的国家金融机构签署相关协议，不会直接参与贷款事务。

秘书处的评论

25. 关于选择在这三个国家开展项目，注意到第 95/87 号决定(g)段规定每个提议的项目

⁸ 为不超过 5 个项目、每个项目不超过 10 万美元的准备提供资金，但有一项谅解，即这些提案将提交第九十六次会议，且为(f)分段中提及的供资窗口只能选出至多两个项目。

不得超过 10 万美元，开发计划署解释称，滚动基金是一个新机制，开发计划署接触了几个国家，谨慎管理预期。这三个国家的政府和国家办公室都表示有意参与项目。哥伦比亚和约旦都有能效滚动基金，这一现有平台，以及提议的滚动基金项目，一经核准，将促成更快地实施以及在不同应用中更多地采用节能、更低/低 GWP 制冷剂技术。至于加纳，项目旨在巩固通过 AGORA⁹ 项目积累的经验和建立的关系，其中包括与国家商业银行和金融机构签署协议，为可持续制冷解决方案提供资金（如含低 GWP 制冷剂的节能产品和改进设备的生命周期末端）。

26. 秘书处要求提供更多资料，说明开发计划署有经验处理非赠款工具（如债务工具）以支持国家级的项目。开发计划署解释称，如果在此项目下核准资金，其国家办公室将与相关国家金融机构签署相关法律协议，财务往来流程将由国家办公室与国家金融机构一起处理。对与国家金融机构的资金流安排和风险管理程序的规划将确保资金安全，并在滚动基金妥当使用后归还。开发计划署将在其参与项目执行的国家和地区工作组的支持下监督项目执行，开发计划署还解释称，它们将运用统一现金转账办法所规定的政策和程序来评估风险，并确定减缓这些风险的机制。

27. 关于开发计划署是否有涉及可回收资金的工具，如滚动基金，开发计划署解释称其可以根据可偿还赠款协议采用工具，协议中包括资本转移条款和收款机构退款给开发计划署的支付时间表。此外，当联合国资本发展基金在有关国家参与实施这一滚动基金时，可以采用适用于该发展基金的标准贷款协议。该发展基金可以为滚动基金的信用管理提供能力建设支持和技术支持以及为其绩效管理提供风险评估和运营支持。

28. 秘书处要求进一步解释，鉴于要在可能存在不同行政程序和运行流程的不同国家运转这样一个滚动基金，如何应对实施多国别项目潜在的延迟风险。开发计划署称其在全球环境基金下在迅速、及时地执行多国别项目方面具有丰富的经验。此外，关于项目提交的时间，开发计划署也作了解释，在核准准备金后，大约需要 12 个月提交项目，预计还需要另外 12 个月启动滚动基金的实施。关于资金获得核准之后如何在各国间分配的问题，开发计划署解释称，这些细节将在项目准备过程中经过详细磋商和对三个国家提供的资料进行分析之后，在项目得到充分开发之后予以提交。

秘书处的建议

29. 执行委员会不妨考虑核准为哥伦比亚、加纳和约旦的最终用户建立能效滚动基金的全球项目准备，额度为 20 万美元，外加开发计划署的机构支助费用 14,000 美元。

⁹ “减少加纳和尼日利亚废弃制冷空调设备的温室气体排放”（AGORA）是开发计划署和环境规划署的联合提高能效组织合作实施的项目。

Annex I

INSTITUTIONAL STRENGTHENING PROJECT PROPOSALS¹

Bangladesh: Renewal of institutional strengthening

Summary of the project and country profile			
Implementing agency:			UNDP
Amounts previously approved for institutional strengthening (US \$):			
Phase I:	Sept-94		169,500
Phase II:	Nov-99		113,000
Phase III:	Dec-01		110,628
Phase IV:	Dec-04		138,043
Phase V:	Nov-07		139,457
Phase VI:	Jul-10		138,525
Phase VII:	Dec-13		137,628
Phase VIII:	Dec-16		173,600
Phase IX:	May-19		178,029
Phase X:	Nov-21		178,048
	Total:		1,476,457
Amount requested for renewal (phase XI) (US \$):			344,448
Amount recommended for approval for phase XI (US \$):			344,448
Agency support costs (US \$):			24,111
Total cost of institutional strengthening phase XI to the Multilateral Fund (US \$):			368,559
Date of approval of country programme:			1993
Date of approval of HCFC phase-out management plan:			2011
Date of approval of Kigali HFC implementation plan:			n/a
Baseline consumption of controlled substances (ODP tonnes/CO ₂ -eq tonnes):			
(a)	Annex B, Group III (methyl chloroform) (average 1998-2000)		0.9
(b)	Annex C, Group I (HCFCs) (average 2009-2010)		72.6
(c)	Annex E, (methyl bromide) (average 1995-1998)		0.0
(d)	Annex F (HFCs) (average 2020-2022 plus 65% of HCFC baseline)		5,473,532
Latest reported ODS consumption (2023) (ODP tonnes) as per Article 7:			
(a)	Annex B, Group III (methyl chloroform)		0.00
(b)	Annex C, Group I (HCFCs)		29.93
(c)	Annex E, (methyl bromide)		0.00
	Total:		29.93
(d)	Annex F (HFCs) (CO ₂ -eq tonnes) as per Article 7		4,586,619
Year of reported country programme implementation data:			2023
Amount approved for projects (as at December 2024) (US \$):			18,442,339
Amount disbursed (as at December 2023) (US \$):			15,429,245
ODS to be phased out (as at December 2024) (ODP tonnes):			750.8
ODS phased out (as at December 2023) (ODP tonnes):			731.2

1. Summary of activities and funds approved by the Executive Committee:

Summary of activities	Funds approved (US \$)
(a) Investment projects:	13,097,317
(b) Institutional strengthening:	1,476,457
(c) Project preparation, technical assistance, training and other non-investment projects:	3,868,565
Total:	18,442,339
(d) HFC activities funded from additional voluntary contributions	3,131,610

¹ Data as at December 2023 are based on document UNEP/OzL.Pro/ExCom/95/16.

Progress report

2. Under phase X, Bangladesh successfully sustained compliance with the Montreal Protocol through effective enforcement of regulations, monitoring mechanisms, and stakeholder collaboration. The NOU worked closely with key national agencies such as the National Board of Revenue (NBR) – Customs Authority, Ministry of Commerce, foam and the refrigeration and air-conditioning (RAC) industry to ensure compliance with ODS phase-out regulations. Bangladesh has completely phased out HCFC-141b in the foam sector under stage II of its HCFC phase-out management plan (HPMP), and progress continues for the refrigeration servicing sector. Bangladesh also prepared for the submission of stage III of its HPMP and stage I of its KIP after its ratification of the Kigali Amendment. The NOU initiated awareness and capacity-building programmes for customs officials, enforcement agencies, and industry stakeholders to facilitate a smooth transition to low-GWP refrigerants. Bangladesh continued to meet its data reporting obligations under Article 7 and country programme data reporting, ensuring timely submission.

Plan of action

3. In the upcoming phase, Bangladesh will continue implementing strategies to fulfil its obligations under the Montreal Protocol and Kigali Amendment while ensuring a sustainable transition to alternative refrigerants. The Government will focus on the effective enforcement of ODS and HFC control measures through a combination of policy interventions, technical assistance, capacity-building programs, and private sector engagement. The IS project will further build the capacity of the Ozone Layer Protection Unit and enhance coordination with Customs Authority, industry, trade, and local enforcement bodies to ensure effective implementation of ODS and HFC control measures.

Sustainability and risk assessment

4. The IS project will continue to be implemented under the UNDP National Implementation Modality, granting Bangladesh full ownership of project outcomes. The UNDP country office and the Bangkok Regional Hub will provide technical and implementation support, including IT tools, project execution regulations, and financial/procurement guidance, to mitigate project execution risks. UNDP and the Government will co-chair the Project Steering Committee (PSC), with the NOU-DoE as the Implementing Partner, ensuring accountability for achieving project results. The project risk assessment categorizes Bangladesh's IS project as moderate risk due to challenges in policy enforcement, industry transition to low-GWP refrigerants, and financial constraints in adopting alternative technologies. Additionally, macroeconomic factors, currency fluctuations, and potential regulatory delays could impact implementation speed. These risks will be managed through enhanced inter-agency coordination, private sector engagement, and funding mobilization from the MLF. The PSC mechanism will continuously assess risks, and mitigation strategies will be refined as needed to sustain compliance with the Montreal Protocol and Kigali Amendment. Despite these challenges, Bangladesh has demonstrated strong commitment to the Montreal Protocol through institutional strengthening, proactive policy and project implementation, and stakeholder engagement. The continued collaboration between the government, industry, and international partners will ensure sustained compliance with the Kigali Amendment and a successful transition to climate-friendly refrigerants.

Brazil: Renewal of institutional strengthening

Summary of the project and country profile			
Implementing agency:			UNDP
Amounts previously approved for institutional strengthening (US \$):			
Phase I:	Jun-93		455,503
Phase II:	Mar-98		305,100
Phase III:	Dec-00		305,100

Summary of the project and country profile			
	Phase IV:	Jul-04	295,107
	Phase V:	Jul-07	323,928
	Phase VI:	Apr-10	312,270
	Phase VII:	Apr-12	377,178
	Phase VIII:	Nov-15	474,834
	Phase IX:	Dec-20	480,730
		Total:	3,329,750
Amount requested for renewal (phase X) (US \$):			930,066
Amount recommended for approval for phase X (US \$):			930,066
Agency support costs (US \$):			65,105
Total cost of institutional strengthening phase X to the Multilateral Fund (US \$):			995,171
Date of approval of country programme:			1994
Date of approval of HCFC phase-out management plan:			2011
Date of approval of Kigali HFC implementation plan:			n/a
Baseline consumption of controlled substances (ODP tonnes/CO ₂ -eq tonnes):			
(a)	Annex B, Group III (methyl chloroform) (average 1998-2000)		32.4
(b)	Annex C, Group I (HCFCs) (average 2009-2010)		1,327.3
(c)	Annex E, (methyl bromide) (average 1995-1998)		711.6
(d)	Annex F (HFCs) (average 2020-2022 plus 65% of HCFC baseline)		79,503,644
Latest reported ODS consumption (2023) (ODP tonnes) as per Article 7:			
(a)	Annex B, Group III (methyl chloroform)		0.0
(b)	Annex C, Group I (HCFCs)		491.6
(c)	Annex E, (methyl bromide)		0.0
	Total:		491.6
(d)	Annex F (HFCs) (CO ₂ -eq tonnes) as per Article 7		37,407,024
Year of reported country programme implementation data:			2023
Amount approved for projects (as at December 2024) (US \$):			156,724,036
Amount disbursed (as at December 2023) (US \$):			137,675,132
ODS to be phased out (as at December 2024) (ODP tonnes):			14,131.7
ODS phased out (as at December 2023) (ODP tonnes):			13,844.8

5. Summary of activities and funds approved by the Executive Committee:

Summary of activities	Funds approved (US \$)
(a) Investment projects:	136,831,685
(b) Institutional strengthening:	3,329,750
(c) Project preparation, technical assistance, training and other non-investment projects:	16,562,603
Total:	156,724,036
(d) HFC activities funded from additional voluntary contributions	0

Progress report

6. Phase IX was crucial to support Brazil in achieving the commitments under the Montreal Protocol. Funds were allocated to improve the licensing system, to enhance monitoring, to improve actions for controlling imports and exports of controlled substances, to provide training, to streamline agreements with governmental entities, stakeholders, and partners, to oversee approved projects and their outcomes, to carry out communication and information dissemination activities targeting different audiences, and to involve NOU representatives and partners in national and international strategic meetings.

Plan of action

7. In addition to maintaining the commitments previously made to phase out HCFC consumption, the next IS project (phase X) will support the NOU in defining measures for implementing the commitments made to phase down HFC consumption, pursuant to the guidelines established by the Kigali Amendment. Special attention will be given to the generation of outcome indicators, especially regarding gender integration.

Sustainability and risk assessment

8. Regarding sustainability, the NOU will continue to work on communication actions, together with government and private sector partners, focusing on different target audiences, in order to strengthen the actions oriented to protect the ozone layer and the global climate system. Training is understood as essential for the success of the measures adopted, and therefore, new actions for training and raising awareness of the target audience will be undertaken, in addition to strengthening those already in progress. The issue of energy efficiency of refrigeration and air-conditioning equipment will be further explored in a joint effort involving the participation of the Ministry of Mines and Energy, which is the national agency responsible for the subject. Finally, the environmentally sound disposal of substances controlled by the Montreal Protocol will continue to be strengthened, in line with the National Solid Waste Policy (Law No. 12,205, of August 12, 2010) and its respective sectoral plans.

附件二

执行委员会对提交给第九十六次会议的延长机构加强项目的看法草案

孟加拉国

1. 执行委员会审查了关于申请延长孟加拉国机构加强项目（第十一期）的报告，赞赏地注意到孟加拉国分别向臭氧秘书处和基金秘书处报告了 2022 年和 2023 年的第 7 条数据和国家方案数据，显示该国履行了《蒙特利尔议定书》。执委会还注意到，该国继续付出努力，执行控制措施以持续淘汰消耗臭氧层物质，包括更新条例和法规以及高效的氟氯烃许可证和配额制度。执委会还注意到孟加拉国在批准《基加利修正案》方面的积极态度，赞扬该国在逐步减少氢氟碳化物方面的尽早行动。执委会注意到孟加拉国通过机构加强项目的支持，在淘汰消耗臭氧层物质、逐步减少氢氟碳化物、能力建设和政策执行方面持续做出努力，并鼓励孟加拉国继续强化数据报告制度并提升工业界对替代技术的准备程度。

巴西

2. 执行委员会审查了关于申请延长巴西机构加强项目（第十期）的报告，赞赏地注意到巴西分别向臭氧秘书处和基金秘书处报告了 2022 年和 2023 年的第 7 条数据和国家方案数据，显示该国履行了《蒙特利尔议定书》。执委会进一步注意到，巴西已采取措施淘汰泡沫行业 HCFC-141b 的消费。执委会认可迄今所做的努力，因此希望巴西政府在未来三年内能够继续成功实施 HPMP 第二阶段和第三阶段以及机构加强项目活动，以实现氟氯烃和氢氟碳化物消费量的削减目标。

**96th Meeting of the Executive Committee of the Multilateral Fund
for the Implementation of the Montreal Protocol**

(26-30 May 2025)

**UNDP
2025 WORK PROGRAMME**

2025 WORK PROGRAMME

I. EXECUTIVE SUMMARY

This document constitutes UNDP's 2025 Work Programme and is being submitted for consideration of the Executive Committee (ExCom) at its 96th Meeting. The list of submissions for all funding requests (including investment projects) that will be submitted by UNDP to the 96th ExCom meeting in Annex 1 to this document is provided for information. Project documentation such as tranche requests under multi-year agreements (MYA), investment and demonstration project proposals and other individual proposals are not included in this document and are submitted separately as per normal practice. Only the following (non-investment) submissions are part of this document.

II. FUNDING REQUESTS PART OF THE WORK PROGRAMME

Institutional Strengthening Extensions

UNDP is submitting the requests for funding the extension of institutional strengthening projects to the 96th ExCom Meeting as tabulated below. Relevant terminal reports and requests for extension of funding are being submitted separately.

Country	Type	Title	Duration (months)	Amount	Agency Fee	Total
Bangladesh	INS	Institutional Strengthening Renewal (Phase XI)	36	344,448	24,111	368,559
Brazil	INS	Institutional Strengthening Renewal (Phase X)	36	930,010	65,101	995,111
Total (2 request2)				1,274,458	89,212	1,363,670

Preparation funding requests for HFCs phase down

UNDP is submitting the following funding requests for the preparation of the Stage I KIP Foam Sector Plan to the 96th ExCom meeting. Annex 4 contains the submission.

Country	Type	Title	Duration (months)	Amount	Agency Fee	Total
Philippines (the)	PRP	PU Foam Mfg Sector Plan	12	80,000	5,600	85,600
Total (1 request)				80,000	5,600	85,600

Project preparation (PRP) requests for pilot projects to maintain and/or enhance energy efficiency of replacement technologies and equipment in the context of HFC phase-down

Pursuant to the ExCom decision 91/65, UNDP is submitting the following requests for the preparation of pilot projects to maintain and/or enhance energy efficiency of replacement technologies and equipment in the context of HFC phase-down. Annex 2 contains submission.

Country	Type	Title	Duration (months)	Amount	Agency Fee	Total
Ghana	PRP	Energy Efficiency window with focus on Commercial Refrigeration Preparation	12	30,000	2,100	32,100
Total (1 request)				30,000	2,100	32,100

Project preparation (PRP) requests for the development of an Energy Efficiency Revolving Fund for End-Users

Pursuant to the ExCom decision 95/87 to provide funding for the preparation of a project on the operationalization of an Energy Efficiency Revolving Fund in the context of HFC phasedown UNDP is submitting one PRP request for Colombia, Ghana and Jordan.

Country	Type	Title	Duration (months)	Amount	Agency Fee	Total
Global	PRP	Energy Efficiency Revolving Fund Preparation	12	200,000	14,000	218,000
Total (1 request)				200,000	14,000	214,000

Other requests for non-investment projects

UNDP is requesting the ExCom to approve the funding for the following countries for verification reports for the HPMPs at its 96th meeting.

Country	Type	Title	Duration (months)	Amount	Agency Fee	Total
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Haiti	TAS	HPMP Verification Report	12	30,000	2,700	32,700
Moldova	TAS	HPMP Verification Report	12	30,000	2,700	32,700
Total (2 requests)				60,000	5,400	65,400

III. SUMMARY OF FUNDING REQUESTS (WORK PROGRAMME)

The table below summarizes the funding requests for non-investment activities and proposals being submitted to the 96th ExCom Meeting as part of UNDP's Work Programme for 2025:

Country	Type	Title	Duration (months)	Amount	Agency Fee	Total
Bangladesh	INS	Institutional Strengthening Renewal (Phase XI)	36	344,448	24,111	368,559
Brazil	INS	Institutional Strengthening Renewal (Phase X)	36	930,010	65,101	995,111
Haiti	TAS	HPMP Verification Report	12	30,000	2,700	32,700
Ghana	PRP	Energy Efficiency window with focus on Commercial Refrigeration Preparation	12	30,000	2,100	32,100
Global	PRP	Energy Efficiency Revolving Fund Preparation	12	200,000	14,000	214,000
Philippines	PRP	PU Foam Manufacturing Sector Plan	12	80,000	5,600	85,600
Moldova	TAS	HPMP Verification Report	12	30,000	2,700	32,700
Total (7 requests)				1,644,458	116,312	1,760,770

ANNEX 1

List of all UNDP submissions for funding to the 96th ExCom Meeting

No .	Country	Type	Description	Funding Request to the 96th ExCom (US\$)		
				Amount	Agency Fee	Total
1	Bangladesh	INS	Institutional Strengthening Renewal (Phase XI)	344,448	24,111	368,559
2	Brazil	INS	Institutional Strengthening Renewal (Phase X)	930,066	65,105	995,171
3	Cuba	DEM	Pilot project to improve energy efficiency of replacement technologies in the context of HFC phase-out in Cuba	700,000	63,000	763,000
4	Egypt	KIP	KIP Stage I - 1st tranche	3,548,116	248,368	3,796,484
5	El Salvador	PHA	HPMP Stage II - 2nd Tranche	244,255	17,098	261,353
6	Georgia	TAS	Introduction of alternatives to HCFCs with low or zero GWP and for maintaining energy efficiency in the refrigeration servicing sector:	100,000	7,000	107,000
7	Georgia	KIP	KIP Stage I - 1st tranche	91,000	11,830	102,830
8	Ghana	PRP	Energy Efficiency window with focus on Commercial Refrigeration Preparation	30,000	2,100	32,100
9	Global	PRP	Energy Efficiency Revolving Fund Preparation	200,000	14,000	214,000
10	Haiti	PHA	HPMP Stage II - 1st Tranche	248,000	17,360	265,360
11	Haiti	TAS	Introduction of alternatives to HCFCs with low or zero GWP and for maintaining energy efficiency in the refrigeration servicing sector:	100,000	7,000	107,000
12	Haiti	TAS	HPMP Verification Report	30,000	2,700	32,700
13	Iran (Islamic Republic of)	PHA	HPMP Stage III - 1st Tranche	1,230,230	86,116	1,316,346
14	Lebanon	KIP	KIP Stage I - 1st tranche	2,071,127	144,979	2,216,106
15	Moldova	TAS	HPMP Verification Report	30,000	2,700	32,700
16	Philippines	PRP	PU Foam Manufacturing Sector Plan	80,000	5,600	85,600
17	Sri Lanka	KIP	KIP Stage I - 1st tranche	359,887	25,192	385,079
Total (17 requests)				10,337,129	744,259	11,081,388

Notes:

- All amounts in are in US dollars.
- Special reports due (delays, balances, status reports, etc.) as well as other projects not part of the WPA will be submitted separately.

ANNEX 2

Preparation funding requests for Energy Efficiency Proposals

Energy Efficiency window with focus on Commercial Refrigeration **Project Preparation Fund Request**

Title of Project: Pilot demonstration project to replace HFC condensing units in existing commercial cold stores in Ghana with HC-290 monoblock (aka plug-in) refrigeration units and CO2 Condensing Unit, as alternative environmentally friendly systems with improved energy efficiency.

Objective: Air-cooled HFC condensing unit (CU) operating with R404A and R507A is the dominant refrigeration system in commercial cold stores in Ghana. Many of the units were initially R22 units that were retrofitted to HFC following the implementation of the HPMP campaign advising the cold store operators to phase out the use of R22 in their facilities. After the Kigali amendment kicked in and HFCs became tagged for phase-down, HFC cold stores operators lack clear direction on suitable alternative solution to get their facilities off the HFC CUs due to the lack of CUs operating with suitable non-ODS substitute of low-GWP.

The objective of the project is conduct a pilot through the replacement of existing HFC CUs in several commercial cold stores with HC-290 monoblock units to demonstrate that the HC-290 monoblock unit is an environmentally friendly and energy efficient alternative to the HFC CU in the commercial cold stores. For the few large HFC CUs cold stores with storage capacity in thousands, CO2 CUs is proposed since it will be impracticable to fit the large number of HC monoblock units that will be required to make up their cooling requirement.

The choice of HC monoblock unit for the small to medium capacity cold store (cap. 100 – 800 MT) rests on the fact that, presently, as a result of the charge limitation of HC to minimize the flammability risk, there are presently no HC CUs on the international market of matching cooling capacity to replace the existing HFC CUs in the commercial cold stores. HC CUs that are available today on the market today are mostly in the order of 1-2 hp capacities that are suitable for small walk-in cold store cabinets. It is noted that, although CO2 CU of capacities that match that of the HFC CUs in the cold stores is available today, Ghana first choice of natural refrigerant to replace hazardous synthetic refrigerants is HC. As a result, the NOU has run continuous training for the local RAC technicians to prepare them adequately to service HC RAC installations. This has weighed in favour of recommending HC monoblock units to replace the small to medium cold stores operating with HFC condensing units.

The energy use of the beneficiary cold stores will be measured before and after replacing their existing HFC CUs with HC-290 monoblock and CO2 CU units to establish the improvement in their energy efficiency. Improvement in energy efficiency and their non-ODS and negligible GWP characteristics of the 2 natural refrigerants will help to establish them as suitable replacement options for the HFCs in the cold stores sub-sector.

Funding Window: Energy efficiency window with the focus on commercial refrigeration sector.

Estimated Funding for this project: USD 450,000

Requested PRP funding: USD 30,000

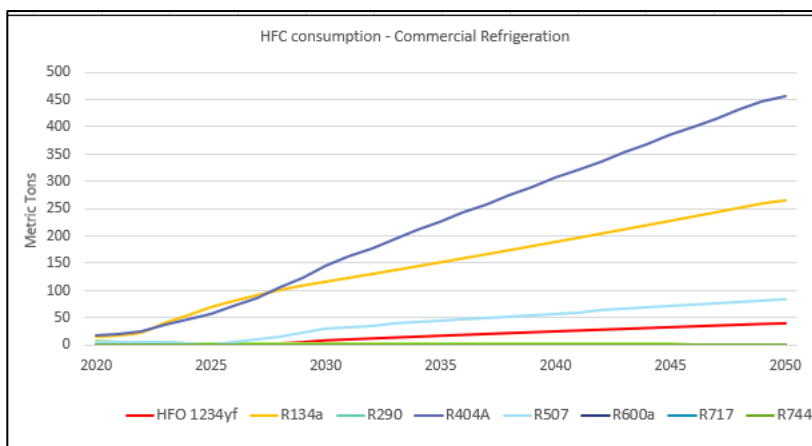
Justification of the project

- i. Sectorial analysis of the Commercial Refrigeration sector

Ghana's Commercial refrigeration equipment comprises stand-alone units, cold rooms as well as condensing unit systems. The popularity of standalone units stems from its versatility in usage. Small vendors often use these to store perishables, also commonly used as beverage coolers, ice cream and frozen food storage which are directly supplied by bottlers and ice cream producers to their distributors. The stand-alone units are also integral to large supermarkets as display cabinets and island freezers. Currently ~49% of stand-alone units use R134A while 17% of them use R404A. In the case of cold rooms and condensing units, R134a, R404A and R407A are commonly used. Since many of the cold rooms use R404A, there is an associated increased quantity of R404A used for servicing purposes.

Figure 1: Projection for HFC use in Commercial refrigeration (BAU) in MT

The projections done for this sector under BAU scenario indicates that R404A and R134a would continue to dominate the sector, especially with the phase out of R22 by 2030. R404A is expected to dominate this sector under BAU scenerio. While the standalone units only contribute a small fraction of the overall refrigerant



use, it will be the cold rooms condensing units that tend to have much higher leakage rates, requiring frequent topping up, that would lead to a significant rise in the use of HFCs in this sector. Recovery practices are not common and thus venting of refrigerants during repairs adds to the refrigerant needs for this sector.

- ii. Project justification

Ghana experiences widespread power shortages due to energy shortfalls. As a result energy efficiency programmes have been identified to solve energy supply challenges and the high cost of power. Consequently, the residential and commercial sectors have been recognized as an important target group for energy efficiency programmes. Reducing the inefficiencies in these sectors an effective way of reducing energy use and related environmental impacts.

The residential and commercial sectors in Ghana accounts for 53% of the total final energy consumption, compared to other countries. Electrical appliances such as refrigerators, freezers and room air conditioners (RACs), and cold store CUs are energy-intensive and are among the most common and the reason it's been identified as a priority sector for transformation in the National

Cooling Plan for energy efficiency programmes and to adopt and implement energy efficiency measures to reduce energy consumption significantly.

The commercial cold stores comprise of the large frozen depots in Tema harbor and the smaller capacity cold stores scattered all over the country including those serving the hotels and large catering institutions. Their cooling units are predominantly condensing units operating largely with R-404A and a few with R-507A. A few cold stores in the regions operate with R-22 condensing units.

Generally, energy demand for the RAC sector in Ghana is estimated to increase steadily from 7.04 TWh in 2015 to 20.9 TWh in 2050 and corresponding GHG emissions can increase from 5.05 mT CO₂eq in 2015 to 12.8 mT CO₂eq, in a BAU scenario. Thus, transitioning to energy efficient RAC technologies using low GWP refrigerants such as hydrocarbons offers great potential savings in electricity use and total RAC GHG emissions.

The use of R134a and R404A in this sector has meant that although currently only 14% of the total HFC refrigerant is used in this sector, the domination of R404A use in this commercial refrigeration sector leads to this sector contributing significantly (21%) to the total CO₂eq emissions of the RAC sector. Current HFC consumption patterns and future projections of Business as Usual (BAU) scenario for Ghana indicates that Ghana's HFC 404A consumption will rapidly exceed the KIP reduction targets post 2030.

As Ghana's focus is on natural refrigerants solutions, the commercial sector would be a suitable candidate for demonstrating R290 and CO₂ refrigeration systems which are slowly becoming global mainstream technology for the commercial refrigeration sector. Both these technologies are currently not available in the local market. The shift from high GWP refrigerants to natural refrigerants in the commercial refrigeration sector will reduce overall demand of these refrigerants, thus aiding reduction in emissions.

Sustainable transformational change in the RAC sector in Ghana can only be achieved through a multipronged approach starting with the creation of an enabling environment that will allow for the smooth transition to zero/low GWP technologies (KIP Stage 1).

The proposed HC-290 and CO₂ pilot demonstration project to replace HFC 404A CU in cold stores will benefit the country from the potential reduction in HFC use that the project can trigger among the existing HFC CU cold stores and thereby help to meet KIP HFC reduction target post 2030.

Potential beneficiaries

The pilot project will benefit a total of four (4) HFC 404A CU cold stores (2 in southern Ghana and 2 in northern Ghana) by serving as a reliable and energy efficient example for them to emulate. Mortuaries in the country also operate with HFC CUs and stand to benefit equally. The nation will also benefit from the potential reduction in HFC use that the project can trigger among the existing HFC CU cold stores and thereby help to meet KIP HFC reduction target post 2030.

The four (4) pilot cold stores that will benefit from the pilot project will recover 194 kg of R404A and lead to annual saving of 0.3% of HFC 404A consumption based on 2022 data. In the Ghana KIP report, commercial cold stores operating with condensing units in the country was estimated to be 513 units in 2022 with significant impact on energy consumption.

Taking a cue from the success and impact of the End User Incentive Program under the HPMP which promoted conversion from R22 to HFC, it is projected that after the successful completion of the pilot project followed by its advocacy campaign to the cold stores nationwide by the NOU, a minimum of eight (8) cold stores per year will be attracted to retire their HFC CU to the natural refrigerant versions leading to increased annual saving of 0.6% of HFC 404A consumption. This

number is expected to grow subsequently to a minimum of sixteen (16) cold stores per year corresponding to increased annual saving of 1.2% of HFC consumption.

The proposed interventions are expected to contribute to a projected range of 20-40% of energy savings. The energy consumption of the 4 pilot cold stores will be logged before and after the replacement with a data logger to serve as evidence for the NOU implement awareness creation campaign to the cold store operators.

Estimated budget

The cooling capacities of the HC CU monoblock units will be suitable for replacing HFC CUs in the small to medium capacity cold stores in the range 100 to 800 MT. Above 800 MT, central ammonia water-cooled plant is increasingly becoming the preferred choice to avoid the high operational cost of energy consumption, refrigerant top-up and frequent breakdowns of the air-cooled CU systems.

The project will aim to carry out the replacement for a total of 4 cold stores, 2 in the southern half of the country and 2 in the northern half. The largest population of cold stores in the country are located in the Tema Fishing harbour representing the southern half and Kumasi central market representing the northern half. The NOU will advertise the opportunity for interested cold store operators to apply to be considered for the demonstration. Selection will be based on first come first served. In addition, cold stores to be considered for the demonstration must meet the requirement of good cold room insulation, efficient doors and good record keeping of their operations. This requirement is necessary to give a realistic measure of energy savings which is projected to be in the range 20-40%.

The estimated budget for the project preparation stage is detailed in the table that follows:

ITEM	WORKING DAYS	RATE (USD)	AMOUNT (USD)
International Consultant	8	700	5,600
Local Consultant	40	500	20,000
Local Travel cost	N/A	N/A	3,400
Miscellaneous	N/A	N/A	1,000
Total			30,000

Activities to be undertaken during the project preparation

1. Conduct analysis of the sub-sector by carrying out the following:

- i. Conduct assessment of existing cold stores suitability to convert to HC monoblock units and CO2 CU units and interact with the facility operators/owners to educate on the HFC phase-down agenda and the importance of the proposed project opportunity to demonstrate replacement of existing HFC CU systems to the natural refrigerants units. The interaction will also highlight good cold store practices that interested cold stores will have to meet to qualify for consideration such as planned maintenance schedule, good housekeeping and record keeping, especial for refrigerant top-ups.
- ii. Estimate the size of the sub-sector, evaluate their consumption of refrigerants by type and quantity, assess the general maintenance of the refrigeration equipment and the cold store generally and their economic conditions to meet the requirement for their facility to be considered for the demonstration project.

- iii. Conduct SWOT analysis to gain general understanding of the internal strengths and weaknesses in addition to the external opportunities and threats facing the proposed project for the sub-sector and suggest strategies to deal with the challenges the project can face.
- 2. Elaborate on strategies and expectations for cold store practices.
 - i. Explain the technological differences between the HFC CU and HC Monobloc plus the CO2 CU, highlighting the HC flammability risks if not handled safely.
 - ii. Explain the advantages of running the cold store facility and refrigeration equipment according to the approved procedures (planned maintenance, good housekeeping, good record keeping, especially regarding accurate record of refrigerant top -ups, etc).
 - 3. Elaborate on the executive plan for the project
 - i. Explain the HFC phase-down implications of the Kigali Amendment to the Montreal Protocol and the obligation for the nation to meet its KIP reduction targets and reporting as required under the Protocol.
 - ii. Explain the energy saving benefit and global warming reduction of the project to the cold store operators and the nation as a whole.



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