



**United Nations
Environment
Programme**

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/96/22

3 May 2025

ORIGINAL: ENGLISH



EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-sixth Meeting
Montreal, 26-30 May 2025
Item 9(c) of the provisional agenda¹

UNIDO's WORK PROGRAMME FOR 2025

¹ UNEP/OzL.Pro/ExCom/96/1

Pre-session documents of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol are without prejudice to any decision that the Executive Committee might take following issuance of the document.

COMMENTS AND RECOMMENDATION OF THE FUND SECRETARIAT

1. UNIDO is requesting approval from the Executive Committee of US \$904,451, plus agency support costs of US \$64,512 for its 2025 work programme listed in table 1. The submission is attached to the present document.

Table 1: UNIDO's work programme for 2025

Country	Activity/Project	Amount requested (US \$)	Amount recommended (US \$)
SECTION A: ACTIVITIES RECOMMENDED FOR BLANKET APPROVAL			
A1: Renewal of institutional strengthening projects			
Mexico	Renewal of institutional strengthening project (phase XVII)	654,451	654,451
	Subtotal for A1	654,451	654,451
	Agency support costs	45,812	45,812
	Total for A1	700,263	700,263
A2: Project preparation for HCFC phase-out management plan (HPMP)			
Turkmenistan	Preparation of an HPMP (stage III)	30,000	30,000
	Subtotal for A2	30,000	30,000
	Agency support costs	2,100	2,100
	Total for A2	32,100	32,100
A3: Preparation of a national inventory of banks of used or unwanted controlled substances and a plan for the collection, transport, and disposal of such substances²			
South Africa	Preparation of a national inventory of banks of used or unwanted controlled substances and a plan	100,000	100,000
	Subtotal for A3	100,000	100,000
	Agency support costs	7,000	7,000
	Total for A3	107,000	107,000
A4: Preparation of energy efficiency pilot projects under decision 91/65			
Egypt	Preparation of a project to enhance energy efficiency in data centres in the context of HFC phase-down	30,000	30,000
North Macedonia	Preparation of a project to enhance energy efficiency in data centres in the context of HFC phase-down	30,000	30,000
	Subtotal for A4	60,000	60,000
	Agency support costs	4,200	4,200
	Total for A4	64,200	64,200
A5: Technical assistance to prepare a verification report on HCFC consumption			
Albania	Verification report for stage II of the HPMP	30,000	30,000
Armenia	Verification report for stage III of the HPMP	30,000	30,000
	Subtotal for A5	60,000	60,000
	Agency support costs	5,400	5,400
	Total for A5	65,400	65,400
	Total for A1, A2, A3, A4, A5	904,451	904,451
	Agency support costs for A1, A2, A3, A4, A5	64,512	64,512
	Grand total	968,963	968,963

* Recommended for individual consideration

² Herein referred to as preparation of a national inventory of banks of used or unwanted controlled substances and plan

ACTIVITIES RECOMMENDED FOR BLANKET APPROVAL

A1: Renewal of institutional strengthening projects

Project description

2. UNIDO submitted a request for the renewal of the institutional strengthening project for the country listed in section A1 of table 1. The description for this project is presented in annex I to the present document.

Secretariat's comments

3. The Secretariat reviewed the request for the renewal of the institutional strengthening project against the guidelines³ and relevant decisions regarding eligibility and funding levels. The request was cross-checked against the original work plan for the previous phase, country programme (CP) and Article 7 data, the latest report on implementation of the HCFC phase-out management plan (HPMP), the agency's progress report, and any relevant decisions of the Meetings of the Parties. It was noted that the country had submitted its 2023 CP and Article 7 data, is in compliance with the control targets under the Montreal Protocol, and that the reported annual HCFC consumption does not exceed the annual maximum allowable consumption indicated in its HPMP Agreement with the Executive Committee. Furthermore, the request submitted included an assessment of performance indicators, project risk and sustainability, and achievement of the institutional strengthening objectives, in accordance with decision 91/63(b).

Secretariat's recommendation

4. The Secretariat recommends blanket approval of the institutional strengthening renewal request for Mexico at the level of funding indicated in section A1 of table 1 of the present document. The Executive Committee may wish to express to the aforementioned Government the comments presented in annex II to this document.

A2: Project preparation for HCFC phase-out management plan

Project description

5. UNIDO submitted a request for the preparation of stage III of the HPMP for one country as the designated implementing agency, as shown in section A2 of table 1.

6. UNIDO provided descriptions of the activities to support the request for project preparation for stage III of the HPMP for Turkmenistan, which included: justification for the requested project preparation funding; a progress report on the implementation of stage II of the HPMP; and the list of activities to be undertaken during project preparation and the corresponding budgets using the format for requests for project preparation for HPMPs.

Secretariat's comments

7. In reviewing the request, the Secretariat took into account the guidelines for funding the preparation of HPMPs for Article 5 countries contained in decision 71/42; the progress of stage II of the HPMP including the status of implementation of the tranches as at the preparation of the present document; and

³ Decision 91/63: (b) to approve the revised format for terminal reports and requests for the extension of institutional strengthening funding and the corresponding performance indicators; and (c) to request Article 5 countries, through the bilateral and implementing agencies, to use the revised format referred to in subparagraph (b) above for all requests for institutional strengthening renewal as of the first meeting of the Executive Committee in 2023.

decision 84/46(e).⁴ The Secretariat noted that the funding requested is in line with decision 71/42 and that the request is in accordance with decision 82/45 allowing the submission of a request for project preparation for stage III of the HPMP two years before the end date of stage II of the HPMP.

8. The Secretariat further noted that the country had submitted its 2023 Article 7 and CP data, that the country is in compliance with the control targets under the Montreal Protocol, and that its reported annual HCFC consumption does not exceed the annual maximum allowable consumption indicated in its HPMP Agreement with the Executive Committee.

9. UNIDO confirmed that stage III of the HPMP for Turkmenistan will phase out 100 per cent of the country's HCFC baseline by 1 January 2030.

Secretariat's recommendations

10. The Secretariat recommends blanket approval for project preparation for stage III of the HCFC phase-out management plan for Turkmenistan, at the level of funding shown in section A2 of table 1.

A3: Preparation of a national inventory of banks of used or unwanted controlled substances and a plan for the collection, transport, and disposal of such substances

Project description

11. UNIDO submitted a request for the preparation of a national inventory of banks of used or unwanted controlled substances and plan for one country as the designated implementing agency, as shown in section A3 of table 1.

12. UNIDO provided a description of the activities required for the preparation of a national inventory of banks of used or unwanted controlled substances and plan for South Africa and the corresponding costs for each activity, using the relevant submission form for project proposals.

Secretariat's comments

13. In reviewing the request, the Secretariat took into account the criteria for the preparation of a national inventory of banks of used or unwanted controlled substances and a plan, contained in decision 91/66, as well as the activities proposed for project preparation and their connection with its national phase-out/phase-down plans (i.e., HPMP or KIP) in the country. The Secretariat noted that the funding request is in line with decision 91/66.

14. The activities in the funding request include a desk study on data from national surveys on ODS/HFC consumption, ODS surveys, and recovery and recycling activities; research on policies and regulations regarding refrigerant emissions and collection, the collection of waste equipment at its end-of-life; a national survey to conduct the inventory of unwanted ODS, controlled substances and equipment; stakeholder workshops; and the preparation of an action plan and final report.

Secretariat's recommendation

15. The Secretariat recommends blanket approval for the preparation of a national inventory of banks of used or unwanted controlled substances and a plan for the collection, transport, and disposal of such substances for South Africa at the level of funding shown in section A3 of table 1.

⁴ Inclusion of stage III of HPMPs in the business plan is allowed only for those countries with an approved stage II of HPMPs with reduction targets below the 2025 compliance targets.

A4: Preparation of pilot projects to maintain and/or enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (decision 91/65)

Project description

16. UNIDO submitted two requests for project preparation for pilot projects to enhance energy efficiency in the context of HFC phase-down in two countries, as the designated implementing agency, as shown in section A4 of table 1. The submissions were made in line with decision 91/65.

17. The requests are for the preparation of pilot projects to enhance energy efficiency in data centres through the adoption of innovative cooling technologies (such as liquid cooling, evaporative cooling, and free air cooling) and optimizing data centre design. The results of the projects would support the sectors in Egypt and North Macedonia, which have been expanding rapidly both in the number of centres and in data centre capacity.

18. Preparation activities include data collection for the evaluation of energy and HFC consumption and technology assessments focusing on enhancing energy efficiency, from up to three data centres in Egypt and one data centre in North Macedonia; the provision of technical support; stakeholder workshops and the production of comprehensive project documents for submission. For both countries, the funding requested would cover the recruitment of international consultants (US \$25,000) and stakeholder workshops (US \$5,000). The pilot project proposals are expected to be submitted to the 98th meeting.

Secretariat's comments

19. The Secretariat reviewed the project proposals according to the criteria set out in decision 91/65 and noted that both requests fall under subparagraph (b)(i)c.⁵ The projects would assist the selected end user(s) in introducing and evaluating the benefits of the selected energy-efficient and low-global-warming-potential (GWP) technology. The results would be disseminated to other end users in the sector to encourage further adoption of the technology and market acceptance. This would thus support greater penetration of energy-efficient low-GWP refrigerant-based technologies in the country. The Secretariat also noted that a project under decision 91/65 was approved at the 93rd meeting to upgrade three testing laboratories for Egypt,⁶ and a project under decision 91/65 is submitted at the present meeting for North Macedonia seeking to improve the country's framework for energy efficiency in the refrigeration and air-conditioning sector by strengthening the legal system, enhancing the energy efficiency of HFC-based equipment, and promoting minimum energy performance standards (MEPS).

20. On potential policies being considered by the Governments to avoid the growth of HFC consumption in data centres, such as stricter enforcement of energy efficiency standards for data centres, regulations to limit or phase out the use of high-GWP HFCs in cooling systems, and incentives for adopting sustainable cooling technologies, UNIDO stated that both Governments would consider potential policy measures to address this. Possible measures will be discussed during the stakeholder meetings during the implementation of the project.

21. The project aims to reduce HFC consumption by promoting the transition to low-GWP alternatives. UNIDO explained that Egypt has an estimated 20 to 30 data centres and North Macedonia has about 12 data centres currently using HFC-based equipment (mainly R-407C and R-410A). It is expected that the preparatory funding would assist the countries in identifying the number of enterprises and estimating the

⁵ Projects involving technical assistance for the assembly and installation of equipment that would result in the adoption of technologies to maintain and/or enhance energy efficiency while converting from HFCs and demonstrate replicability and scalability in the country or region would be considered in priority.

⁶ UNEP/OzL.Pro/ExCom/93/53

current and projected HFC consumption in data centres so the impact of the pilot project on HFC reductions and replicability can be clearly presented in the final proposal.

22. UNIDO further stated that these countries face challenges such as limited technical expertise, lack of stakeholder awareness and compliance, and financial constraints. However, opportunities include strengthening the policy framework, international collaboration, and developing a local market for sustainable cooling technologies. Addressing these challenges and leveraging opportunities can help Egypt and North Macedonia transition to a sustainable cooling sector, improving energy efficiency and supporting the HFC phase-down.

23. The Secretariat noted that UNIDO had initially requested US \$100,000 for the project preparation for Egypt and US \$80,000 for North Macedonia, which both aimed to include all data centres in their respective countries to map data, assess technology, and develop a sector plan. However, considering the objective of decision 91/65 of supporting pilot projects, UNIDO agreed to adjust the scope and revised the request to US \$30,000 each for Egypt and North Macedonia, for developing pilot projects.

Secretariat's recommendation

24. The Secretariat recommends blanket approval for the preparation of pilot projects to improve energy efficiency in data centres, in the context of HFC phase-down for Egypt and North Macedonia, at the level of funding shown in section A4 of table 1.

A5: Technical assistance to prepare a verification report on HCFC consumption

Project description

25. In line with decision 61/46(c),⁷ the Secretariat drew a sample of 12 low-volume consuming (LVC) Article 5 countries for the purpose of verifying compliance with their HCFC phase-out management plan (HPMP) Agreements. The selected countries are listed in table 5 of document UNEP/OzL.Pro/ExCom/96/16 on the overview of issues identified during project review. UNIDO, as the lead implementing agency, is requesting funding for the verification of stage II of the HPMP for Albania, and stage III of the HPMP for Armenia (subject to approval of stage III of the HPMP, submitted at the present meeting).

Secretariat's comments

26. The Secretariat noted that the funding request was consistent with the funds approved for similar verifications in previous meetings and it further noted that the verification reports must be submitted at least 10 weeks prior to the applicable Executive Committee meeting where the next funding tranche for the HPMP is being sought.

Secretariat's recommendation

27. The Secretariat recommends blanket approval for technical assistance for the preparation of the verification report for stage II of the HCFC phase-out management plan (HPMP) for Albania and for stage III of the HPMP for Armenia, at the level of funding shown in section A5 of table 1, on the understanding that the verification reports must be submitted at least 10 weeks prior to the applicable Executive Committee meeting where the next funding tranche for the HPMP are being sought.

⁷ The Secretariat was requested to provide, at the first meeting of each year, a list representing 20 per cent of countries with an HCFC consumption baseline of up to 360 metric tonnes, and with an approved HPMP, to approve funding for them for the purposes of verification of that country's compliance with the HPMP agreement for that year.

Annex I

INSTITUTIONAL STRENGTHENING PROJECT PROPOSALS¹

Mexico: Renewal of institutional strengthening

Summary of the project and country profile	
Implementing agency:	UNIDO
Amounts previously approved for institutional strengthening (US \$):	
Phase I: Jun-92 & Dec-94	350,000
Phase II: Jul-95 & May-96	107,350
Phase III: Oct-96	214,700
Phase IV: Jul-98	214,700
Phase V: Jul-00	163,190
Phase VI: Jul-02	274,191
Phase VII: Apr-05	265,525
Phase VIII: Jul-07	264,232
Phase IX: Jul-09	198,842
Phase X: Dec-10	262,724
Phase XI: Dec-12	264,286
Phase XII: Nov-14	264,196
Phase XIII: Jul-17	337,940
Phase XIV: Dec-18	319,561
Phase XV: Dec-20	315,672
Phase XVI: Dec-22	466,842
Total:	4,283,952*
Amount requested for renewal (phase XVII) (US \$):	654,451
Amount recommended for approval for phase XVII (US \$):	654,451
Agency support costs (US \$):	45,812
Total cost of institutional strengthening phase XVII to the Multilateral Fund (US \$):	700,263
Date of approval of country programme:	1992
Date of approval of HCFC phase-out management plan:	2011
Date of approval of Kigali HFC implementation plan:	2023
Baseline consumption of controlled substances (ODP tonnes/CO ₂ -eq tonnes):	
(a) Annex B, Group III (methyl chloroform) (average 1998-2000)	56.4
(b) Annex C, Group I (HCFCs) (average 2009-2010)	1,148.8
(c) Annex E (methyl bromide) (average 1995-1998)	1,130.8
(d) Annex F (HFCs) (average 2020-2022 plus 65% of HCFC baseline)	76,982,664
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)	168.23
(c) Annex E (methyl bromide)	0.00
Total:	168.23
(d) Annex F (HFCs) (CO ₂ -eq tonnes) as per Article 7	50,254,745
Year of reported country programme implementation data:	2023
Amount approved for projects (as at December 2024) (US \$):	153,254,349
Amount disbursed (as at December 2023) (US \$):	135,621,141
ODS to be phased out (as at December 2024) (ODP tonnes):	8,601.5
ODS phased out (as at December 2023) (ODP tonnes):	7,259.7

*Excluding funds transferred from UNDP to UNIDO at the 37th meeting

¹ Data as at December 2023 are based on document UNEP/OzL.Pro/ExCom/95/18.

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

Summary of activities	Funds approved (US \$)
(a) Investment projects:	134,472,494
(b) Institutional strengthening:	4,340,486*
(c) Project preparation, technical assistance, training and other non-investment projects:	14,441,369
Total:	153,254,349
(d) HFC activities funded from additional voluntary contributions	1,298,123

*This includes the US \$56,535 for phase V of the institutional strengthening project that was transferred from UNDP to UNIDO at the 37th meeting

Progress report

2. In phase XVI of the IS project, the NOU oversaw the implementation of the approved Montreal Protocol project portfolio and the application of the quota and licensing system to ensure compliance with the phase-out schedule under stage II of the HPMP. Adjustments to the national regulations were made to incorporate HFC mix codes. Collaboration with authorities in charge of enforcing restrictions for the import of HCFC and HFC was strengthened. Awareness-raising activities were carried out to promote the use of alternatives with low global warming potential. A project portfolio including the KIP, energy-efficiency strategy, banks of used or unwanted controlled substances inventory, and phase-out HFC-23 represented a high level of complexity in both technical and operational aspects.

Plan of action

3. The NOU is committed to building on the achievements under phase XVI to ensure continuous monitoring of ODS and other controlled substances. The NOU plans to improve the HFC quota distribution mechanism and HCFC reduction calendar for 2026-2028 and continue improving the required regulatory mechanism and instruments to ban ODS including pre-blended polyols. The NOU will continue complying with international guidelines on project development and will maintain advocacy and awareness-raising activities with relevant stakeholders. The institutional capacities of the NOU will be reinforced through training on project management, logical framework, project cycle and gender mainstreaming. The NOU is committed to gender mainstreaming and will promote synergies between the recently approved KIP and HPMP projects. Due to the heavy workload, an expansion of the NOU team is required to ensure the effective delivery of all Multilateral Fund programme and project activities.

Sustainability and risk assessment

4. The NOU is well established under the Ministry of Environment and Natural Resources with clear roles and responsibilities. The legislation already in place ensures that the NOU can conduct its responsibilities. Continuous trainings for NOU staff can further help to strengthen the capacities of the NOU team and thus further contribute to the sustainability of the achieved results.

Annex II

DRAFT VIEWS EXPRESSED BY THE EXECUTIVE COMMITTEE ON RENEWAL OF INSTITUTIONAL STRENGTHENING PROJECTS SUBMITTED TO THE 96TH MEETING

Mexico

1. The Executive Committee reviewed the report submitted with the request for the renewal of the institutional strengthening project for Mexico (phase XVII) and noted with appreciation that reported Article 7 and country programme data for 2023 and 2024 to the Ozone and Fund Secretariats, respectively, indicating that the country is in compliance with the Montreal Protocol phase-out schedule. The Committee noted that Mexico reported HFC data and froze its consumption at the baseline level. The Committee further noted that Mexico implemented a strict monitoring system for the consumption of controlled substances, organized regular meetings with authorities involved in the steering of the control system, and has coordinated the necessary activities with all stakeholders involved. The Committee noted that awareness-raising activities have also been organized, including the one marking World Ozone Day every year, and several events in centres for the training of refrigeration and air-conditioning technicians highlighting the importance of developing skills necessary for the adequate management of alternatives to HCFCs and HFCs. The Committee acknowledged the efforts of the Government of Mexico and is therefore hopeful that, within the next three years, the Government of Mexico will continue the implementation of activities supported by the Multilateral Fund with success to maintain compliance with the control measures of the Montreal Protocol.



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO WORK PROGRAMME

Presented to the 96th Meeting of the Executive Committee of the Multilateral Fund

Introduction

The UNIDO Work Programme (WP) for the consideration of the 96th Meeting of the Executive Committee (ExCom) of the Multilateral Fund (MLF) has been prepared following the Government requests as well as based on ongoing and planned activities. The Work Programme will support the implementation of UNIDO's three year Rolling Business Plan 2025-2027.

The 96th UNIDO WP is addressing preparatory assistance, institutional strengthening requests and verification reports.

Preparatory assistance is submitted for the 96th Executive Committee Meeting consideration for Turkmenistan to enable the country to overview and update data necessary for the launch and implementation of HPMP Stage III.

Based on decision 91/66, funding is requested for preparation of inventory of banks of used or unwanted controlled substances and a plan for the collection, transport and disposal of such substances for South Africa.

Preparatory assistance funding for developing energy efficiency pilot projects is requested for Egypt and North Macedonia.

Institutional strengthening extension request is submitted based on the country request for Mexico.

Verification report funding is being requested for two LVC countries, namely Albania and Armenia.

The UNIDO Work Programme for the consideration of the 96th ExCom Meeting comprises the following sections:

- **Section 1:** Consolidated list of activities foreseen for the above requests by project types and country; and
- **Section 2:** Project concepts indicating details and funding requirements.

Funding is requested as follows:

- Preparatory assistance funding for HPMP Stage III for Turkmenistan amounting to US\$ 32,100 (including US\$ 2,100 representing 7.0 % agency support costs);
- Preparatory assistance for preparation of national inventory of banks of waste controlled substances and development of a national plan for management of these substances in South Africa amounting to US\$ 107,000 (including US\$ 7,000 representing 7.0% agency support costs);
- Preparatory assistance funding for developing energy efficiency pilot projects in Egypt and North Macedonia amounting to US\$ 64,200 (including US\$ 4,200 representing 7.0 %

agency support costs);

- Institutional strengthening project for Mexico amounting to US\$ 700,263 (including US\$ 45,812 representing 7.0 % agency support costs); and
- Verification report funding for Albania and Armenia amounting to US\$ 65,400 (including US\$ 5,400 representing 9% agency support costs).

Total: US\$ 968,963 (including 64,512 agency support cost).

SECTION 1

Country	HCFC Status	Type	Substance	Sector and Sub-Sector	Title of Project	Total amount USD	A.S.C.	Total (incl ASC) USD	A.S.C. %	P.D.
Preparatory Assistance for HPMP										
Turkmenistan	LVC	PRP	HCFC	Overarching	Preparation of Stage III HPMP	30,000	2,100	32,100	7%	24
SUBTOTAL						30,000	2,100	32,100		
Preparation of national inventory of banks of waste controlled substances and development of a national plan for management of these substances										
South Africa	Non-LVC	PRP	SEV	DES	Preparation of national inventory of banks of waste controlled substances and development of a national plan for management of these substances	100,000	7,000	107,000	7%	24
SUBTOTAL						100,000	7,000	107,000		
Institutional Strengthening										
Mexico	Non-LVC	INS	All	SEV	Institutional strengthening	654,451	45,812	700,263	7%	36
SUBTOTAL						654,451	45,812	700,263		
Funding for preparation of energy efficiency pilot projects under decision 91/65										
Egypt	Non-LVC	PRP	HFC	EEF	Preparation of energy efficiency pilot project	30,000	2,100	32,100	7%	24
North Macedonia	LVC	PRP	HFC	EEF	Preparation of energy efficiency pilot project	30,000	2,100	32,100	7%	24
SUBTOTAL						60,000	4,000	64,200		
Verification reports										
Albania	LVC	TAS	HCFC	SEV	Verification report	30,000	2,700	32,700	9%	24
Armenia	LVC	TAS	HCFC	SEV	Verification report	30,000	2,700	32,700	9%	24
						60,000	5,400	65,400		
GRAND TOTAL						904,451	64,512	968,963		

SECTION 2

PROJECT CONCEPT – TURKMENISTAN

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:	HCFC phase-out plan (stage III)	
Country:	Turkmenistan	
Lead implementing agency:	UNIDO	
Implementation period:	2025-2030	
Funding requested:		
Agency	Sector	Funding requested (US \$)*
UNIDO	Overarching	30,000

*Details should be consistent with information provided in the relevant sections below.

Part II: Prerequisites for submission

Item	Yes	No
1. Official endorsement letter from Government specifying roles of respective agencies (where more than one IA is involved)	☒	☐
2. Written confirmation – balances from previous PRP funding approved for stage I HPMP had been returned / will be returned (decision 71/42(i))	☐	☒
Specify meeting at which PRP funding balance had been returned/will be returned	PRP funds have been fully utilised.	

A. Information required to support PRP funding (Overarching strategy)

1. Montreal Protocol compliance target to be met in ☐ stage II / ☒ stage III of the HPMP			
Phase-out commitment (%)	100% (Allowance of 2.5% for servicing of RAC equipment existing on 1 January 2030)	Year of commitment	2030
☒ Servicing only		☐ Manufacturing only	☐ Servicing and manufacturing
2. 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.)			
Stage II of the HPMP for Turkmenistan was approved at the 86th meeting to meet the 67.5 per cent reduction from the baseline by 2025, at a total cost of US \$308,500, plus agency support costs, to phase out 2.21 ODP tonnes of HCFCs used in the refrigeration and air conditioning (RAC) servicing sector for five years starting in January 2021. The Government of Turkmenistan decided to separate the IS project from stage II of the HPMP, as a way of seeking complementary actions and optimizing resources. At the end of Stage II the Government of Turkmenistan has issued HCFC import quotas for 2025 at 2.22 ODP tonnes, which is corresponding the Montreal Protocol control targets. Substantial progress was achieved under the previous stage of the HPMP, particularly in the refrigeration servicing sector. The Centre of Excellence was upgraded with eight new training simulators, and trainers were certified to deliver programs aligned with international standards. Over 40 environmental inspectors received training on the Montreal Protocol, non-ODS technologies, and ODS identification. Certification courses for RAC technicians were launched, focusing on natural refrigerants, ODS recovery, and energy efficiency. Additionally, 50 stakeholders, including government and private sector representatives, were trained on updated legislation and best practices. Progress on establishing an ODS reclamation system has been more limited. While draft			

regulations were prepared, potential reclamation sites identified, and technical documentation developed, the procurement of the necessary equipment and operationalization of the system is scheduled for the final tranche of Stage II. This work remains a key priority for completion before 2025.

3. Current progress in implementation of previous stage of the HPMP

Activity	Description	Implementing agency
Refrigeration servicing sector	Upgrading the centre of excellence in low- and zero-GWP alternative technology: eight training simulators were procured and distributed to the Centre of Excellence, training on their proper use was successfully completed; the training programs were developed and delivered.	UNIDO
Refrigeration servicing sector	Capacity Building for Environmental Inspectors: a total of 40 environmental inspectors (both men and women) from the Hydrometeorology and State Ecological Control Services received training on the Montreal Protocol, alternative non-ODS technologies, the ODS licensing and quota system, and ODS identification in Turkmenistan.	UNIDO
Refrigeration servicing sector	Training for Trainers at the Centre of Excellence: the trainers (both men and women) from the Centre of Excellence (Innovation Scientific and Education Center at Yagshageldi Kakaev International Oil and Gas University) were trained in accordance with internationally recognized certification requirements. This training equips them to educate students using the Center's programs, ensuring compliance with global certification standards.	UNIDO
Refrigeration servicing sector	Certification Courses for RAC Technicians covering the safe use of natural refrigerants, ODS recovery and destruction, and energy efficiency were initiated and implemented.	UNIDO
Refrigeration servicing sector	Stakeholder Training on Policy and Technical Advancements: fifty key stakeholders, including government authorities and private sector representatives in the RAC industry, participated in training sessions on updated ozone layer protection and climate change legislation. Sessions also covered the use of natural refrigerants across various sectors and energy efficiency practices. Efforts were made to ensure the participation of women.	UNIDO
Refrigeration servicing sector	To establish an ODS reclamation system needed regulatory measures were identified and proposed, e. g. prohibition of the deliberate venting of ODS, mandatory leakage control for industrial refrigeration and chillers, and compulsory collection, reclamation, and disposal of ODS; three enterprises were chosen as potential candidates for the reclamation site, and to supply the set of equipment to collect and recycle ODS and HFCs, including a reclamation unit, refillable containers, filters, and accessories for three years. Development of technical documentation for the establishment of an ODS and HFC collection and reclamation system were conducted. The procurement of the necessary equipment and operationalization of the system is scheduled for the final tranche of Stage II	UNIDO

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

Substance	Sector	2022	2023	2024
HCFC-22	RAC servicing	73.30	77.38	64.41
5. 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)				
Since 2020, HCFC consumption has remained below the control level of 4.42 ODP tonnes, largely due to the successful implementation of HPMP activities. These efforts include the enforcement of a licensing and quota system, training for servicing technicians, public awareness campaigns, and the ban on importing HCFC-based equipment, which took effect on 1 January 2016. Additionally, the increasing importation of RAC equipment using alternative refrigerants has contributed to the decline. The higher consumption observed in 2023 resulted from lower consumption in preceding years, driven by the country's economic situation.				
6. 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 sectoral consumption information	Review available information and collect additional data through questionnaires, interviews and site visits to relevant sectors. Assessment of sectoral distribution of HCFC consumption through consultation with relevant stakeholders.	UNIDO		
Analysis of the types of equipment using HCFCs	Assessment of the types of equipment still using HCFCs through consultation with relevant stakeholders.	UNIDO		
Others, specify.	Assessment of the needs of relevant stakeholders	UNIDO		
7. Activities to be undertaken for project preparation and funding				
Activity	Indicative funding (US \$)	Agency		
Assessment of sectoral distribution of HCFC consumption.	10,000 USD	UNIDO		
Drafting of the HPMP stage III proposal.	15,000 USD	UNIDO		
Workshop to validate the proposal by stakeholders.	5,000 USD	UNIDO		
TOTAL	30,000 USD			
8. 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?				
With the approval of Turkmenistan's Kigali Implementation Plan (KIP) Stage I at the 92nd Meeting of the Executive Committee, the country is now implementing both KIP Stage I and the HPMP in parallel. Given that these efforts will continue to run concurrently with the final stage of the HPMP, namely Stage III, Turkmenistan is aiming to align the phase-out of HCFCs with the phase-down of HFCs wherever feasible. This approach will help streamline activities, make better use of available resources, and reduce the risk of overlap. The implementation of the KIP at the same time as the project preparation for stage III of the HPMP opens up the possibility for a more unified and cost-efficient strategy that addresses both ozone-depleting substances and high-GWP alternatives in a coordinated way, particularly in terms of training and equipment procurement activities. To navigate this, Turkmenistan will apply a blend of integrated and parallel approaches. While parallel implementation allows for more tailored, substance-specific actions, integrated efforts can bring cost savings and efficiency by combining resources and avoiding duplication. This balanced strategy is expected to support a smooth and effective implementation of both plans.				
9. How will the Multilateral Fund gender policy be considered during project preparation?				

HPMP Stage III fully integrates the Multilateral Fund's gender policy, embedding gender considerations throughout the entire project cycle. While the relevance of gender dimensions may vary depending on the specific activities, promoting gender equity and equality remains a key priority. Recognizing that gender roles and responsibilities influence access to and control over environmental resources, the project is designed to ensure that both women and men can equally benefit from its opportunities. All human resource development initiatives, including trainings, workshops, and awareness programs, are open to all genders and will actively encourage women's participation. Gender-disaggregated data, such as the ratio of male to female participants, will be collected at project inception to establish a baseline. Throughout implementation, the NOU and UNIDO will work collaboratively to improve this baseline and promote greater gender balance. At project completion, the gender indicators will be reassessed and analyzed to evaluate progress and inform future initiatives.

PROJECT CONCEPT – SOUTH AFRICA

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:	Preparation for the national inventories of banks of used or unwanted controlled substances and plan for the collection, transport and disposal of such substances.
Country:	Republic of South Africa
Lead implementing agency:	UNIDO
Meeting where request is being submitted	96 th Executive Committee Meeting
Implementation period	2026-2027
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 months	
Funding requested:	
Agency	Funding requested (US \$)*
UNIDO	100,000

*Details should be consistent with information provided in the relevant sections below.

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:		

A. 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

1. 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
South Africa will take guidance provided in paragraphs 16 to 32 of document UNEP/OzL.Pro/ExCom/91/66 in the development of national inventories of waste-controlled substances contained in equipment and bulk stockpiles. South Africa has collected information linked to the Enabling Activities for Hydrofluorocarbon (HFC) Phase-Down and the preparation of HPMP stage II to estimate consumption and the number of equipment, for all refrigerants, installed in the country in the different applications and their servicing needs. The past data will be used as basis for the survey to build on and collect information on the number of

installed equipment and their age, the charge inside the equipment, the rate at which this equipment will reach their end-of-life, and the amount of refrigerant of each type that will need to be recovered. The survey will also determine the quantity of refrigerant, by type, that has been either recovered through the existing RRR process, or illegal refrigerants that have been confiscated and stockpiled. The exercise will enable South Africa to determine the amounts that will be needed to be disposed until 2030.

The survey will also review the existing regulations regarding refrigerant recovery as well as the country's waste management landscape. Information will also be collected on the regional and international obligations of South Africa in this respect.

An action plan will be developed for the proper management and disposal of the stockpiles and to ensure the sustainability of the actions that are being proposed. The action plan will be discussed on a national level and approved by stakeholders.

2. 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
Others, specify.	A national consultant will review available data and conduct a survey on HCFC consumption per refrigerant used in the servicing sector. In addition, the consultant will conduct a study to identify and quantify the existing used and unwanted refrigerant banks and estimate the quantity of future banks based on the installed RAC appliances.	UNIDO
Others, specify.	A national consultant will review available data and collect additional sector-specific data per refrigerant through questionnaires and interviews. The survey will provide more granular data covering sectors, sub-sectors and consumption per region.	UNIDO
Others, specify.	A national consultant will conduct an inventory of equipment using HCFC. The inventory will include the type of equipment; age of equipment; substance used; quantity of substance recovered, reused, disposed of and stored. In addition, the consultant will evaluate the existing ODS regulations pertaining to the inventory and disposal of banks.	UNIDO
New information on ODS regulations	A national consultant will formulate a plan to improve or develop regulations on the inventory and management of used or unwanted controlled substances and the transport and disposal of these substances.	UNIDO

3. Funding for the activities described in 2 above

Activity	Indicative funding (US \$)	Agency
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1- Desk study: An initial desk study of already available data from national surveys on consumption of HCFCs undertaken in the preparation of HPMPs, ODS alternatives surveys, equipment importers, recovery and recycling activities from waste management operators, and collection, dismantling and recovery of the waste refrigerants and other substances from end-of-life equipment.	USD 10,000 Number of national consultants: 1	UNIDO
2 – Preparation work: Conduct an assessment of policies and regulations regarding refrigerant emissions and collection as well as waste collection of equipment at their end-of-life. The analysis will be done on a national and regional scale including a review of the international obligations of South Africa for related protocols and agreements. An understanding of the waste sources is needed to prepare a methodology for quantifying the amount of waste-controlled substances in the country.	US\$ 10,000 Number of consultants: 1	UNIDO
3 – Survey: A national consultant will conduct an inventory of unwanted ODS, controlled substances and equipment including the type of equipment; age of equipment; substance used; charge inside the equipment, quantity of substance recovered, reused, disposed of and stored. The survey will cover all sectors. Consultant will check the collected data against consumption data and other sources of information.	US\$ 35,000 Number of national consultants: 3	UNIDO
4 - Preparation of a final report of the inventory of unwanted controlled substances which includes an action plan include: An understanding of the sources and banks of waste-controlled substances in the country (inventory of banks);	US\$ 25,000 Number of consultants: 2	UNIDO

Description of the existing and required policies and regulations supporting the management of waste-controlled substances including recovery and recycling (and reclamation, where applicable) based on the country's institutional and regulatory framework; Defining the activities that need to be implemented for establishing an effective collection, transportation, storage mechanism and a functioning recycling and reclamation infrastructure, including a tracking system for recovered ODS and waste-controlled substances and their reuse; Description of the responsible actors and their role in the process of collection, storage, transport, and eventual disposal of unwanted controlled substances; Assessing technology options for disposal, including destruction noting best practices, and potential opportunities for co-disposal of waste-controlled substances with other hazardous waste (e.g., persistent organic pollutants (POPs) waste), especially for those countries with very small ODS waste streams; Understanding the impediments for the establishment of domestic destruction capacity and the export of waste for destruction; Addressing the institutional framework needed to support the sustainable management of waste-controlled substances, including eventual disposal and the options identified noting monitoring and verification procedures required for; and		
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Cost considerations of disposal and destruction options including options for financing.		
5 - Analysis of results: The national inventory report and the subsequent data analysis will be discussed in consultation with the relevant stakeholders both in government and in the private sector (i.e., waste management operators, collection centres, or waste aggregators, appliance retailers, refrigeration associations) to ensure their involvement and cooperation for future actions related to the management of these wastes	US\$ 20,000 Number of meetings: 2 Number of consultants: 2	UNIDO
TOTAL	100,000	
4. How will the Multilateral Fund gender policy be considered during project preparation?		
In line with the MLF gender policy contained in ExCom document 84/73, special effort will be made to involve female consultants in the preparation of the proposal as well as female technicians for awareness-raising activities. The project preparation will aim to advocate the importance of gender-responsive actions and provisions in developing the inventory of used or unwanted controlled substances and the transport and disposal of these substances. Programs will take into account allocations for the proposed gender activities (e.g., capacity building activities for female technicians). Also each project component in terms of stakeholders and participation will ensure that both women and men can provide input, access and participate in project activities (e.g., through outreach / invitations of female technicians to participate in stakeholder consultations, expert recruitment etc.).		

PROJECT CONCEPT – EGYPT

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL ENERGY EFFICIENCY EXCOM DECISION 91/65 (EE) PROJECT PREPARATION (PRP)

Part I: Project information

Project title:	Preparatory assistance for the pilot project to enhance the energy efficiency of cooling technologies in data centres in the Arab Republic of Egypt	
Country:	Arab Republic of Egypt	
Lead implementing agency:	UNIDO	
Implementation period for stage RPR EE:	24 months	
Duration of PRP implementation (i.e., time (in months) from the approval of PRP to submission of the project proposal (please specify): 12 months		
Funding requested:		
Agency	Sector	Funding requested (US \$)*
UNIDO	INV - Others	30.000 USD

*Details should be consistent with information provided in the relevant sections below.

Part II: Prerequisites for submission

Item	Yes	No
Official endorsement letter from Government, indicating the specifying roles of respective agencies (where more than one IA is involved)	☒	☐

A. Information required for PRP funding request for investment projects/sector plans as part of Energy Efficiency Funding Window

1. Agency:	UNIDOUNIDO
2. Sector:	Refrigeration, Air-Conditioning
3. HFC consumption in item #2 reported under country programme data?	☒ Yes, please specify reported amount and year: 2023 ☐ No
4. Does the enterprise commit to phase out the HFC consumption associated with the proposed investment project, if approved by the Executive Committee?	☐ Yes, please provide support letter ☐ No ☒ N/A
5. If the project preparation is requested in advance of the KIP, 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 ☒ N/A
6. Please explain briefly how the investment project would relate to the overarching strategy for the country, and when the final KIP will be submitted (decision 87/50(e))	The project will significantly contribute to the energy efficiency improvement in air-conditioning and refrigeration manufacturing and service sectors in Egypt.
7. Background information	
The increasing demand for data storage and processing has led to a global surge in data center development. These facilities, housing critical digital infrastructure, require substantial cooling systems to maintain optimal operating temperatures for servers and other equipment. As data centers proliferate, their energy consumption and environmental impact are becoming significant concerns. Traditional cooling methods in data centers often rely on energy-intensive and greenhouse gas-emitting technologies, including those that utilize hydrofluorocarbons (HFCs). The Kigali Amendment to the Montreal Protocol aims to phase down the production and consumption of HFCs due to their high global warming potential. This necessitates the adoption of sustainable cooling solutions for data centers that are both energy-efficient and environmentally friendly. Innovative cooling technologies, such as liquid cooling, evaporative cooling, and free air cooling, offer promising alternatives to conventional methods. Additionally, optimizing data center design, including server layouts and airflow	

management, can significantly reduce cooling needs. By prioritizing sustainable cooling practices, data centers can minimize their environmental footprint while ensuring the reliable operation of essential digital services.

While precise figures are not readily available, Egypt has a growing number of data centers. These data centers support the country's expanding digital economy, serving businesses, government agencies, and telecommunications providers. The demand for data center capacity in Egypt is expected to increase significantly in the coming years, driven by factors such as increased internet penetration, cloud computing adoption, and the development of smart cities.

Information gathered from one of the data centres in Egypt indicates the following about their current and planned cooling systems:

- **Current System:** a DX (Direct Expansion) air conditioning system;
- **Refrigerant Used:** R407 and R410;
- **Air Conditioning Network Plan:** no draft plan for the air conditioning network;
- **Eco-friendly Certificates/Measurements:** No eco-friendly certificates or measurements related to their cooling systems.
- **Planned Cooling System for New Facility:**
 - Chilled Water System (Compression Type with Adiabatic Solution) in the new facility.
 - The estimated cooling load is 865 tons of refrigerant (3025 kW).
 - Refrigerants planned to use R1234ze (GWP 1) or R513b (GWP 509).
 - The expected unit number is 4 units (N+1).
 - The expected unit capacity is 350 TR.
 - Potential cooling vendors include Johnson Controls or Vertiv.

Existing data centers in Egypt employ a range of cooling technologies, with a mix of traditional and more modern systems. There is a growing recognition of the need to transition to sustainable cooling solutions to align with international climate commitments, the Kigali Amendment, and Egypt's own sustainability goals. Based on a general desk research, Egypt has a mix of data center types. This includes:

- Smaller facilities associated with telecom companies and local businesses.
 - Larger, carrier-neutral data centers.
 - Increasing investment in larger-scale and hyperscale facilities (often driven by cloud providers).
- Egypt has about 20-30 data center facilities. The exact number of data center will be confirmed during the preparation stage. The number is actively increasing.

The adoption of energy-efficient cooling technologies, such as those planned by Raya (chilled water systems with low-GWP refrigerants), along with liquid cooling, evaporative cooling, and free air cooling, can significantly reduce the environmental impact of data centers in Egypt. Optimizing data center design and airflow management are also crucial. By embracing sustainable cooling practices, Egypt can support the growth of its digital infrastructure while mitigating environmental impact.

Challenges and Opportunities

Egypt, like other countries, faces challenges in transitioning to sustainable cooling:

- **Technical Barriers:** Limited availability of technical expertise for implementing and maintaining advanced cooling technologies. The RAC service sector requires training and upskilling.
- **Awareness and Compliance:** Raising awareness about sustainable cooling and ensuring compliance with environmental regulations are essential.
- **Financial Constraints:** Access to funding is needed for capacity building, data collection, and promoting adoption of sustainable cooling.

However, Egypt has opportunities to advance sustainable cooling:

- **Policy and Regulatory Framework:** Strengthening and enforcing existing regulations can drive the adoption of energy-efficient technologies.
- **International Collaboration:** Collaborating with international organizations provides access to expertise, funding, and best practices.

- **Market Development:** Promoting a local market for sustainable cooling technologies can create economic benefits and reduce environmental impact.

By addressing these challenges and leveraging these opportunities, Egypt can transition to a sustainable cooling sector that supports economic growth and environmental protection.

Project Objectives

The project will assess energy and HFC consumption by collecting and analyzing data from up to three data centers, provide technical support and technology assessments to selected data center(s) focusing on energy efficiency enhancement, and develop a comprehensive project document based on the project activities' findings and outcomes.

Expected Outcome

The primary outcome of this project is to deliver a comprehensive and evidence-based project document that serves as a blueprint for synergistic activities in implementing energy efficiency projects while phasing down HFCs to achieve the highest energy efficiency levels in data centers in Egypt.

Key Deliverables

In addition to the Project Document, the following key deliverables will contribute to achieving the project's overarching outcome:

- **Technical Analysis and Gap Assessment:** Expert analysis of survey data and identification of gaps in technology and financing.
- **Project proposal** ready for the submission.

Project Activities

This preparatory assistance project proposal will conduct a comprehensive study to assess the existing data centres and provide technical support to enhance energy efficiency while phasing down hydrofluorocarbons (HFCs) in up to three data centers in Egypt. The study will identify the current state of cooling technology and HFC use, evaluate alternative technologies, and develop a project proposal for the selected data centres.

Key tasks for the preparatory assistance project proposal:

- ☐ **Data Collection and Analysis:**
 - Conduct a workshop for the selected data centre(s) to collect data on their energy consumption volume, consumption, available technologies and possibilities to apply alternative cooling technologies.
- ☐ **Technical Support and Technology Assessment:**
 - Provide technical support and technology assessment to a selected for the pilot data centre(s).
 - Focus on energy efficiency enhancement of their current systems.
 - Include individual consultations as part of the support.
- ☐ **Project Document Drafting:**
 - Draft the project document.

Budget and Timeline

A detailed budget is outlined in the table below. The project duration is estimated to be 24 months.

Conclusion

This preparatory project is essential for building the foundation for successful and sustainable energy efficiency interventions in Egypt's cooling systems in up to three data centers. By investing in capacity building, data collection, and feasibility studies, we can pave the way for significant.

8. Activities to be undertaken for preparation of the investment project and funding requested

Activity	Indicative funding (US \$)	Bilateral/implementing agency
Technical support and technology assessment by an international consultant for selected data centre(s) on the energy efficiency enhancement on their current system and analysis of the data received from them, including webinar and individual consultations.	15,000	UNIDO
Workshop for the selected data centre(s)	5,000	UNIDO
Drafting a project document (International consultant)	10,000	UNIDO
TOTAL	30,000	

PROJECT CONCEPT – NORTH MACEDONIA

**MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL**

**FUNDING REQUEST FOR THE PREPARATION OF ENERGY EFFICIENCY PILOT
PROJECT UNDER DECISION 91/65**

Part I: Project information

Project title:	Preparatory assistance for the pilot project to enhance the energy efficiency of cooling technologies in data centres in the Republic of North Macedonia	
Country:	Republic of North Macedonia	
Lead implementing agency:	UNIDO	
Implementation period for stage RPR EE:	24 months	
Duration of PRP implementation (i.e., time (in months) from the approval of PRP to submission of the project proposal (please specify): 12 months		
Funding requested:		
Agency	Sector	Funding requested (US \$)*
UNIDO	INV - Others	30,000 USD

*Details should be consistent with information provided in the relevant sections below.

Part II: Prerequisites for submission

Item	Yes	No
Official endorsement letter from Government, indicating the specifying roles of respective agencies (where more than one IA is involved)	☒	☐

A. Information required for PRP funding request for investment projects/sector plans as part of Energy Efficiency Funding Window

9. Agency:	UNIDOUNIDO
10. Sector:	Refrigeration, Air-Conditioning
11. HFC consumption in item #2 reported under country programme data?	☒ Yes , please specify reported amount and year: 2023 ☐ No
12. Does the enterprise commit to phase out the HFC consumption associated with the proposed investment project, if approved by the Executive Committee?	☐ Yes , please provide support letter ☐ No ☒ N/A
13. If the project preparation is requested in advance of the KIP, 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 ☒ N/A
14. Please explain briefly how the investment project would relate to the overarching strategy for the country, and when the final KIP will be submitted (decision 87/50(e))	The project will significantly contribute to the energy efficiency improvement in air-conditioning and refrigeration manufacturing and service sectors in North Macedonia.
15. Background information	

The increasing demand for data storage and processing has led to a global surge in data center development. These facilities, housing critical digital infrastructure, require substantial cooling systems to maintain optimal operating temperatures for servers and other equipment. As data centers proliferate, their energy consumption and environmental impact are becoming significant concerns.

Traditional cooling methods in data centers often rely on energy-intensive and greenhouse gas-emitting technologies, including those that utilize hydrofluorocarbons (HFCs). The Kigali Amendment to the Montreal Protocol aims to phase down the production and consumption of HFCs due to their high global warming potential. This necessitates the adoption of sustainable cooling solutions for data centers that are both energy-efficient and environmentally friendly.

Innovative cooling technologies, such as liquid cooling, evaporative cooling, and free air cooling, offer promising alternatives to conventional methods.

Additionally, optimizing data center design, including server layouts and airflow management, can significantly reduce cooling needs. By prioritizing sustainable cooling practices, data centers can minimize their environmental footprint while ensuring the reliable operation of essential digital services.

North Macedonia has a limited number of data centers currently in operation. These data centers primarily serve domestic needs, supporting businesses, government agencies, and telecommunications providers. As the country's digital economy expands and reliance on cloud services grows, the demand for data center capacity is expected to increase within next five years.

Existing data centers in North Macedonia predominantly employ traditional cooling technologies, including air conditioning units and computer room air conditioners (CRACs). These systems often utilize HFC refrigerants, posing environmental challenges due to their high global warming potential. As the country aligns not only with international climate commitments and the Kigali Amendment, but also with more strict EU acquis, transitioning to sustainable cooling solutions for data centers becomes imperative.

The adoption of energy-efficient cooling technologies, such as liquid cooling, evaporative cooling, and free air cooling, can significantly reduce the environmental impact of data centers in North Macedonia. Additionally, optimizing data center design, including server layouts and airflow management, can further minimize cooling needs. By embracing sustainable cooling practices, North Macedonia can ensure the continued growth of its digital infrastructure while mitigating the environmental impact of data centers.

An initial desk research phase has confirmed the existence of at least twelve data centers; however, a more in-depth analysis is required to determine their specific capabilities, capacity, and service offerings

Challenges and Opportunities

While North Macedonia has made commendable progress, challenges remain:

- **Technical Barriers:** A significant challenge lies in the limited availability of technical expertise and capacity to implement and maintain sustainable cooling technologies. The RAC service sector may require upskilling to handle new technologies and refrigerants effectively.
- **Awareness and Compliance:** Raising awareness among stakeholders about the importance of sustainable cooling and ensuring compliance with environmental regulations is crucial.
- **Financial Constraints:** Access to funding is essential for capacity building, data collection, and consumer awareness. Financial incentives and support mechanisms can encourage the adoption of sustainable cooling solutions.

Despite these challenges, North Macedonia has several opportunities to advance sustainable cooling:

- **Policy and Regulatory Framework:** The existing policy and regulatory framework provides a strong foundation for promoting sustainable cooling practices. Strengthening and enforcing these regulations can further incentivize the adoption of energy-efficient technologies.

- **International Collaboration:** Collaboration with international organizations and partners can provide access to technical expertise, funding, and best practices in sustainable cooling.
- **Market Development:** Promoting the development of a local market for sustainable cooling technologies can create jobs and stimulate economic growth while reducing environmental impact.

By addressing these challenges and capitalizing on opportunities, North Macedonia can transition towards a sustainable cooling sector that supports economic growth, protects the environment, and ensures the well-being of its citizens.

Project Objectives

The project objective is to prepare a comprehensive project proposal by assessing the technical, economic, and environmental viability of phasing down HFCs in data center in North Macedonia.

Expected Outcome

The primary outcome of this project is to deliver a comprehensive and evidence-based **project document** that serves as a blueprint for synergistic activities in implementing energy efficiency projects while phasing down HFCs to achieve the highest energy efficiency levels in data centres in North Macedonia.

Key Deliverables

In addition to the Project Document, the following key deliverables will contribute to achieving the project's overarching outcome:

- **Comprehensive Survey Data:** Detailed information on the energy efficiency level of RAC technologies used in one data centre including type of HFCs used, existing legal and policy framework related to their management.
- **Technical Assistance:** Expert analysis of the survey data for one data centre and identification of key gaps in technology and financing.
- **Project Proposal:** Expert will draft a project proposal ready for the submission.

This preparatory assistance project proposal will conduct a data collection and a technical assessment for one data center in North Macedonia to further prepare a project proposal to showcase the successful application of the energy efficient cooling system in a selected data centre.

Key tasks

1. Consultation workshop

- Conduct a workshop for the selected data centre to identify the types and quantities of HFCs currently used in its cooling system.**

2. Technology Assessment:

- Evaluate alternative cooling technologies with low GWP, such as:**
 - Natural refrigerants (e.g., ammonia, CO2, propane)**
 - Indirect evaporative cooling**
 - Liquid cooling**
 - Hybrid systems**
- Assess the technical feasibility, energy efficiency, safety, and cost-effectiveness of each alternative.**

Budget and Timeline

A detailed budget is outlined in the table below. The project duration is estimated to be 24 months.

Conclusion

This preparatory project is essential for building the foundation for successful and sustainable pilot project for one data center in North Macedonia.

16. Activities to be undertaken for preparation of the investment project and funding requested

Activity	Indicative funding (US \$)	Bilateral/implementing agency
Consultation workshop for one data centre	5,000	UNIDO
Technical support (International consultant) and technology assessment of one selected data centres, including webinar and individual consultations	15,000	UNIDO
Drafting a project document (national and international consultant)	10,000	UNIDO
TOTAL	30,000	

Country: MEXICO

Title: Institutional Strengthening for the implementation of Montreal Protocol in Mexico

Project Duration: 36 months (July 2025 – June 2028)

Project Budget: 654,451 (excl. 7% Agency Support Costs)

Implementing Agency: UNIDO

Coordinating Agency: National Ozone Unit (NOU)/ SEMARNAT (Ministry of Environment and Natural Resources)

Project Summary

In phase XVI of the IS project, the NOU successfully oversaw the implementation of the approved Montreal Protocol project portfolio and the application of the quota and licensing system to ensure compliance with the phase-out schedule under the HPMP Stage II. Adjustments to the national regulations were made to incorporate HFC mix codes. Collaboration with authorities in charge of enforcing restrictions for the import of HCFC and HFC was strengthened. Awareness activities were carried out to promote the use of alternatives with low global warming potential.

Project Portfolio including KIP, Energy-efficiency strategy, banks inventory, and phase-out HFC-23 represents a high level of complexity in both technical and operational aspects, for this, an expansion of the NOU team is required to ensure the effective delivery of all MLF programme and project activities.

The NOU is committed to building on the achievements under phase XVI to ensure continuous monitoring of ODS and other controlled substances, the NOU plans to adequate the HFC quota distribution mechanism and HCFC reduction calendar for 2026-2028 and continue improving the required regulatory mechanism and instruments to ban ODS including pre-blended polyols.

The NOU will continue complying with international guidelines on project development and will maintain advocacy and awareness activities with relevant stakeholders. The institutional capacities of the NOU will be reinforced through training on technical aspects such as project management, logical framework, project Cycle and gender mainstreaming. The NOU is committed to gender mainstreaming and will promote synergies between the recently approved KIP and HPMP projects.

The NOU is well established under the Ministry of Environment and Natural Resources with clear roles and responsibilities. The legislation that is already in place ensures that the NOU can conduct its responsibilities. Continuous trainings for NOU staff can further help to strengthen the capacities of the NOU team and thus further contribute to the sustainability of the results.

Country:	Albania
Title:	Verification report of national consumption targets
Project Duration:	24 months
Project Budget:	US\$ 30,000 (excl. 9% Agency Support Costs)
Implementing Agency:	UNIDO
Coordinating Agency:	Ministry of Tourism and Environmental / National Ozone Unit (NOU)

Project Summary

Funding requirement for the preparation of verification report of national program is being requested in accordance with decision 92/21(c).

The HCFC Phase-out Management Plan, Stage II for Albania was approved in June 2020 at the 85th Meeting of Executive Committee of the Multilateral Fund for the implementation of the Montreal Protocol. The second tranche has been approved at the 91st meeting in December 2022 and the additional funding for energy efficiency under decision 89/6 was approved at the 93rd meeting in December 2023. As per the agreement between the country and the Multilateral Fund, the next tranche request under this project is due at the first meeting in 2026. The verification report will be submitted with the 2026 tranche.

Decision 92/21 (c): *‘To request the Secretariat, in line with decision 61/46, to select, from the 92nd meeting onwards, in consultation with the bilateral and implementing agencies, a sample of 20 per cent of the low-volume-consuming countries with ongoing HPMPs for the purpose of verifying those countries’ compliance with their HPMP Agreements between the country’s Government and the Executive Committee, and to request the bilateral and implementing agencies acting as lead agencies for the respective Agreements to include the related costs of verification in their work programmes submitted at the same meeting.*

Country:	Armenia
Title:	Verification report of national consumption targets
Project Duration:	24 months
Project Budget:	US\$ 30,000 (excl. 9% Agency Support Costs)
Implementing Agency:	UNIDO
Coordinating Agency:	Ministry of Environment / National Ozone Unit (NOU)

Project Summary

Funding requirement for the preparation of verification report of national program is being requested in accordance with decision 92/21(c).

The HCFC Phase-out Management Plan, Stage II for Armenia has been completed in December 2021. HPMP Stage III has been submitted for consideration to the 96th ExCom meeting taking place in May 2025. In the proposal, three tranches are foreseen, namely in 2025, 2027 and 2030. Funding is being requested to conduct verification report to be submitted jointly with the second tranche request in 2027, on the condition that the HPMP Stage will be approved at the 96th meeting.

Decision 92/21 (c): *‘To request the Secretariat, in line with decision 61/46, to select, from the 92nd meeting onwards, in consultation with the bilateral and implementing agencies, a sample of 20 per cent of the low-volume-consuming countries with ongoing HPMPs for the purpose of verifying those countries’ compliance with their HPMP Agreements between the country’s Government and the Executive Committee, and to request the bilateral and implementing agencies acting as lead agencies for the respective Agreements to include the related costs of verification in their work programmes submitted at the same meeting.*