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Programa de las Naciones Unidas para el Medio Ambiente

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ORIGINAL: INGLÉS

COMITÉ EJECUTIVO DEL FONDO MULTILATERAL
PARA LA APLICACIÓN DEL
PROTOCOLO DE MONTREAL
Octogésima séptima reunión
Montreal, 28 de junio – 2 de julio de 2021[1]
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PROGRAMA DE TRABAJO DE LA ONUDI PARA 2021

[1] En junio y julio de 2021 se celebrarán reuniones en línea y se llevará a cabo el proceso de aprobación entre períodos de sesiones, debido al coronavirus (COVID-19).

OBSERVACIONES Y RECOMENDACIÓN DE LA SECRETARÍA DEL FONDO MULTILATERAL

1. La ONUDI pide la aprobación del Comité Ejecutivo de $EUA 1 403 500, más gastos de apoyo del organismo de $EUA 98 245, para su programa de trabajo de 2021 que figura en el Cuadro 1.[2] La presentación se adjunta al presente documento.

Cuadro 1: Programa de trabajo de la ONUDI para 2021

País	Actividad/proyecto	Monto pedido ($EUA)	Monto recomendado ($EUA)
SECCIÓN A: ACTIVIDADES RECOMENDADAS PARA APROBACIÓN GENERAL			
A1: Preparación de proyecto para planes de gestión de eliminación de los HCFC			
República Islámica del Irán [a, b, c]	Preparación de un plan de gestión de eliminación de los HCFC (etapa III)	15 000	15 000
	Preparación de actividades de inversión para eliminación de los HCFC (fabricación de equipos de refrigeración y climatización)	50 000	50 000
	Subtotal de A1	65 000	65 000
	Gastos de apoyo del organismo	4 550	4 550
	Total de A1	69 550	69 550

SECCIÓN B: ACTIVIDADES RECOMENDADAS PARA CONSIDERACIÓN INDIVIDUAL				
B1: Preparación de proyecto para planes de gestión de reducción de los HFC				
País	**Presentado en reunión**	**Actividad/proyecto**	**Monto pedido ($EUA)**	**Monto recomendado ($EUA)**
Albania [c]	85	Preparación del plan de gestión de reducción de los HFC	63 500	*
Bolivia (Estado plurinacional de Bolivia)	87	Preparación del plan de gestión de reducción de los HFC	170 000	*
Ecuador	87	Preparación del plan de gestión de reducción de los HFC	190 000	*
Jordania	85	Preparación del plan de gestión de reducción de los HFC	150 000	*
México [c, d]	86	Preparación del plan de gestión de reducción de los HFC	125 000	*
Montenegro	86	Preparación del plan de gestión de reducción de los HFC	85 000	*
Nicaragua	87	Preparación del plan de gestión de reducción de los HFC	170 000	*
Níger	86	Preparación del plan de gestión de reducción de los HFC	150 000	*
Nigeria [b, c]	87	Preparación del plan de gestión de reducción de los HFC	25 000	*
Macedonia del Norte	86	Preparación del plan de gestión de reducción de los HFC	85 000	*
Senegal [e]	86	Preparación del plan de gestión de reducción de los HFC	25 000	*
Sudáfrica	86	Preparación del plan de gestión de reducción de los HFC	100 000	*
		Subtotal de B1	1 338 500	*

[2] Inclusive nuevos pedidos presentados a la 87ª reunión, adjuntos al presente documento, y pedidos para la preparación de planes de gestión de reducción de HFC, diferidos de las reuniones 85ª y 86ª que se presentan en los documentos UNEP/OzL.Pro/ExCom/85/17 y UNEP/OzL.Pro/ExCom/86/35, respectivamente.

País	Actividad/proyecto	Monto pedido ($EUA)	Monto recomendado ($EUA)
	Gastos de apoyo del organismo	93 695	*
	Total de B1	1 432 195	*
	Total general (A1, B1)	1 501 745	69 550

[a] Gobierno de Alemania, como organismo bilateral de cooperación
[b] El PNUD como organismo de ejecución principal
[c] El PNUMA como organismo de ejecución cooperante
[d] El PNUD como organismo de ejecución cooperante
[e] El PNUMA organismo de ejecución principal
* Para consideración individual

SECCIÓN A: ACTIVIDADES RECOMENDADAS PARA APROBACIÓN GENERAL

A1: Preparación de proyecto de planes de gestión de eliminación de los HCFC

Descripción del proyecto

2. La ONUDI presentó pedidos para la preparación de la estrategia general de la etapa III del plan de gestión de eliminación de los HCFC y actividades de la inversión en el sector de fabricación de equipos de refrigeración y climatización para un país del Artículo 5, en calidad de organismo de ejecución cooperante junto con el PNUMA y el gobierno de Alemania, con el PNUD como organismo de ejecución principal, como se indica en la sección A1 del Cuadro 1. El PNUD, como organismo de ejecución principal para la República Islámica del Irán pidió $EUA 50 000 más gastos de apoyo del organismo de $EUA 3 500;[3] el gobierno de Alemania, como organismo bilateral de cooperación pidió $EUA 40 000, más gastos de apoyo del organismo de $EUA 5 200[4] y el PNUMA, como organismo de ejecución cooperante pidió $EUA 15 000, más gastos de apoyo del organismo de $EUA 1 950[5], en sus programas de trabajo para 2021.

3. El PNUD, como organismo de ejecución principal, describió las actividades requeridas para la preparación de una estrategia general y para la preparación de proyectos de inversión en el sector de fabricación de equipos de refrigeración y climatización para la etapa III del plan de gestión de eliminación de los HCFC para la República Islámica del Irán y los costos correspondientes, en su programa de trabajo.[6]

Observaciones de la Secretaría

4. La Secretaría observó que la presentación de los pedidos de preparación de proyecto coincidía con los requisitos de la decisión 71/42,[7] y que la etapa III del plan de gestión de eliminación de los HCFC para la República Islámica del Irán eliminará el consumo restante de los HCFC para el 1 de enero de 2030, a excepción de la última porción para servicio y mantenimiento.

Recomendaciones de la Secretaría

5. La Secretaría recomienda la aprobación general para la preparación del proyecto para la etapa III del plan de gestión de eliminación de los HCFC para la República Islámica del Irán en el nivel de financiación indicado en la sección A1 del Cuadro 1.

[3] UNEP/OzL.Pro/ExCom/87/15
[4] UNEP/OzL.Pro/ExCom/87/14
[5] UNEP/OzL.Pro/ExCom/87/16
[6] UNEP/OzL.Pro/ExCom/87/15
[7] Directrices para el financiamiento de la preparación de la etapa II de los planes de gestión de eliminación de los HCFC para los países del Artículo 5

SECCIÓN B: ACTIVIDADES RECOMENDADAS PARA CONSIDERACIÓN INDIVIDUAL

Peticiones para preparación de proyectos presentadas a las reuniones 85ª y 86ª reuniones

6. En la 85ª reunión, la ONUDI incluyó en su programa de trabajo de 2020[8] pedidos para la preparación de los planes de gestión de reducción de los HFC para Albania y Jordania, como organismo de ejecución principal, con el PNUMA como organismo de ejecución cooperante para Albania, tal como se indica en la sección B1 del Cuadro 1.

7. En la 86ª reunión, la ONUDI incluyó en la enmienda del programa de trabajo de 2020[9] pedidos para la preparación de los planes de gestión de reducción de los HFC para cinco países del Artículo 5, como organismo de ejecución principal, con el PNUMA y el PNUD como organismos de ejecución cooperante para México; y para un país, Senegal, como organismo de ejecución cooperante, con el PNUMA como organismo de ejecución principal, como se indica en la sección B1 del Cuadro 1.

8. Estos pedidos de financiamiento presentados para consideración individual no fueron examinados en las reuniones 85ª y 86ª, y se difirieron a la 87ª reunión, a la luz de las deliberaciones del proyecto de directrices para preparación de planes de reducción de los HFC para los países del Artículo 5 en la 86ª reunión[10] y conforme a la decisión 86/59. En consecuencia, las propuestas presentadas a las reuniones 85ª y 86ª se incluyen en el presente documento.

B1: Preparación de proyecto para los planes de gestión de reducción de los HFC

Descripción de proyectos

9. La ONUDI presentó a la presente reunión las peticiones para los planes de gestión de reducción de los HFC para tres países, como organismo de ejecución principal, y para un país, Nigeria, como organismo de ejecución cooperante, con el PNUD, como organismo de ejecución principal, y el PNUMA como el otro organismo de ejecución cooperante, que el PNUD[11] y el PNUMA[12] presentaron originalmente en la 86ª reunión, como se indica en la sección B1 del Cuadro 1. El PNUD, en calidad de organismo de ejecución principal para el plan de reducción de los HFC para Nigeria, pidió $EUA 137 000, más gastos de apoyo del organismo de $EUA 9 590,[13] y el PNUMA, como organismo de ejecución cooperante, pidió $EUA 58 000, más gastos de apoyo del organismo de $EUA 7 540,14, en sus programas de trabajo para 2021.

Observaciones de la Secretaría

10. La ONUDI, como organismo de ejecución principal, describió las actividades requeridas para la preparación de una estrategia general destinada a reducir los HFC para el Estado Plurinacional de Bolivia, Ecuador y Nicaragua, junto con los costos correspondientes de cada actividad, usando el formato de peticiones para preparación de proyectos para etapas de los planes de gestión de eliminación de los HCFC. Las presentaciones incluyeron las importaciones estimadas de los HFC y las mezclas de HFC para 2015-2019; la lista de actividades para la preparación del proyecto incluyó reuniones y consultas de partes interesadas; actividades de creación de capacidad en el sector de refrigeración y climatización; estudios y actividades de sensibilización relacionados con la promoción de la eficacia energética en todos los sectores; y la formulación de la estrategia de reducción de los HFC. La financiación pedida se basa en el proyecto de

[8] UNEP/OzL.Pro/ExCom/85/17
[9] UNEP/OzL.Pro/ExCom/86/35
[10] Cuestión 13 c) del orden del día
[11] UNEP/OzL.Pro/ExCom/86/33
[12] UNEP/OzL.Pro/ExCom/86/34
[13] UNEP/OzL.Pro/ExCom/87/15
[14] UNEP/OzL.Pro/ExCom/87/16

directrices propuesto para la preparación de los planes de reducción de los HFC,[15] que se presentó a la 86ª reunión y se difirió a la 87ª reunión para otras deliberaciones.

11. El monto de financiamiento para la preparación de las propuestas de proyecto pedido en la reunión 85ª se basó en la financiación para actividades de facilitación (que figuran en la decisión 79/46 c)); no obstante, la financiación pedida en la 86ª reunión se basó en la financiación para la preparación de proyecto para la etapa I de los planes de gestión de eliminación de los HCFC (que figura en la decisión 56/16 c)), si bien los organismos de ejecución y bilaterales utilizaron esta financiación para preparar sus planes administrativos de 2021-2023, que se presentaron a la 86ª reunión. La Secretaría observa que los montos de financiamiento para las peticiones de preparación de proyecto son sólo indicativas, dado que las cantidades reales se decidirán cuando el Comité Ejecutivo concluya su examen del proyecto de directrices para la preparación de los planes de reducción de los HFC para los países del Artículo 5 (decisión 86/93).[16]

12. La Secretaría estudió las presentaciones basadas en la experiencia adquirida al revisar los pedidos de preparación de planes de gestión de eliminación de los HCFC, y teniendo en cuenta la orientación previa y las decisiones adoptadas por el Comité Ejecutivo para tales proyectos.

13. Después de este estudio, la Secretaría observó lo siguiente:

(a) Los tres países para los cuales la ONUDI pidió financiación para la preparación de un plan de gestión de reducción de los HFC, como organismo de ejecución principal, ratificaron la Enmienda de Kigali;[17] cada país sería admisible para la financiación para preparación de proyecto, conforme a la decisión 79/46 b) iii);[18] los países también proporcionaron cartas de endoso indicando su intención de tomar medidas tempranas destinadas a reducir los HFC; y

(b) Las actividades incluidas en la preparación de proyecto son similares a las requeridas para elaborar los planes de gestión de eliminación de los HCFC, a excepción de la ausencia de una encuesta sobre el consumo de HFC; algunas actividades también se asemejaron mucho a las incluidas bajo las actividades de facilitación destinadas a reducir los HFC para las cuales ya se había proporcionado financiación para los tres países, actualmente en curso.

14. La ONUDI aclaró que la preparación del proyecto para la estrategia general de reducción de los HFC se basaría en las actividades ejecutadas bajo las actividades de facilitación, dado que éstas eran las primeras medidas asociadas con la reducción de los HFC y habían contribuido a la ratificación de la Enmienda de Kigali en cada país. La ONUDI subrayó que se evitará la duplicación de actividades ya ejecutadas.

15. Con respecto a la encuesta sobre el consumo de HFC, la ONUDI explicó que se emprenderá con consultas de partes interesadas, ya que actualmente no hay sistemas de otorgamiento de licencias y cuotas para los HFC en esos países; se utilizarán los datos provenientes de las encuestas terminadas sobre alternativas de las SAO, y se recopilará la información durante la preparación de la etapa II del plan de gestión de eliminación de los HCFC de cada país que incluye los datos que se compilan para los HCFC y alternativas, inclusive los HFC.

[15] UNEP/OzL.Pro/ExCom/86/88

[16] UNEP/OzL.Pro/ExCom/87/46

[17] Fecha de ratificación (o aceptación) de la Enmienda de Kigali: Bolivia, 9 de octubre de 2020; Ecuador, 22 de enero de 2018; Nicaragua, 30 de septiembre de 2020.

[18] Después de que un país haya ratificado la Enmienda de Kigali y sobre la base de las directrices que se aprueben en el futuro, se podría proveer financiamiento para la preparación de los planes nacionales de ejecución a fin de cumplir con las obligaciones iniciales de reducción para la reducción de los HFC, como muy pronto, cinco años antes de dichas obligaciones.

16. La Secretaría informó a la ONUDI que no podrá hacer una recomendación sobre estas peticiones dado que las directrices sobre el financiamiento para estas peticiones se seguirán tratando en la 87ª reunión.

Recomendación de la Secretaría

17. El Comité Ejecutivo podría examinar, conforme a las deliberaciones bajo la cuestión 9 a) del orden del día, Reseña de las cuestiones identificadas durante el examen de proyectos, y la cuestión 13 c) del orden del día, Proyecto de orientaciones para la preparación de los planes de reducción de los HFC para los países al amparo del Artículo 5 (decisión 86/93), las peticiones de financiamiento para la preparación de los planes de gestión de reducción de los HFC para los países indicados en la sección B1 del Cuadro 1.

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO WORK PROGRAMME

Presented to the 87th Meeting of the Executive Committee of the Multilateral Fund

Introduction

The UNIDO Work Programme (WP) for the consideration of the 87th 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 2021-2023.

The 87th UNIDO WP is addressing preparatory assistance requests.

Preparatory assistance is submitted for the 87th Executive Committee Meeting consideration for Iran to enable the country to overview and update data necessary for the launch and implementation of HPMP Stage III.

UNIDO is submitting preparatory assistance for HFC phase-down plans for Bolivia Ecuador, Nicaragua and Nigeria to assist the countries with the implementation of the next phases of the Kigali Amendment to the Montreal Protocol.

The UNIDO Work Programme for the consideration of the 87th ExCom Meeting comprises the following sections:

- **Section 1**: Consolidated list of activities foreseen for the above requests by project types and country;
- **Section 2**: Project concepts indicating details and funding requirements; and
- **Section 3**: Request for extension of the duration of the Enabling activities for HFC phase down.

Funding is requested as follows:

- Preparatory assistance funding for HPMP Stage III in Iran[1] amounting to US$ 69,550 (including US$ 4,550 representing 7.0 % agency support costs); and
- Preparatory assistance funding for HFC phase-down plans in Bolivia, Ecuador, Nicaragua and Nigeria[2] amounting to US$ 593,850 (including US$ 38,850 representing 7.0% agency support costs).

Total: US$ 663,400 (including US$ 43,400 agency support cost).

[1] The Project Concept for Iran is included in the Lead Agency (UNDP) Work Programme.
[2] The Project Concept for Nigeria is included in the Lead Agency (UNDP) Work Programme.

SECTION 1

Country	MLF 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.	Remarks
Preparatory Assistance for HPMP											
Iran, Islamic Republic of	Non-LVC	PRP	HCFC-22	Overarching	Preparation of Stage III HPMP	15,000	1,050	16,050	7%	24	In cooperation with UNDP, UNEP and GIZ. Project concept is in UNDP Work Programme
Iran, Islamic Republic of	Non-LVC	PRP	HCFC-22	REF-Air conditioning	Preparation of Stage III HPMP	50,000	3,500	53,500	7%	24	In cooperation with UNDP, UNEP and GIZ. Project concept is in UNDP Work Programme
SUBTOTAL						**65,000**	**4,550**	**69,550**			
Preparatory Assistance for HFC Phase-Down Plans											
Bolivia	LVC	PRP	HFC	SEV	Preparation of HFC phase-down plan	170,000	11,900	181,900	7%	24	
Ecuador	LVC	PRP	HFC	SEV	Preparation of HFC phase-down plan	190,000	13,300	203,300	7%	24	
Nicaragua	LVC	PRP	HFC	SEV	Preparation of HFC phase-down plan	170,000	11,900	181,900	7%	24	
Nigeria	Non-LVC	PRP	HFC	SEV	Preparation of HFC phase-down plan	25,000	1,750	26,750	7%	24	In cooperation with UNDP and UN Environment. Project concept is in UNDP Work Programme.
SUBTOTAL						**555,000**	**38,850**	**593,850**			
GRAND TOTAL						**620,000**	**43,400**	**663,400**			

SECTION 2

PROJECT CONCEPT – Bolivia

Multilateral Fund FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
PROJECT PREPARATION REQUEST FORM
HFC Phase-down Management plan (OVERARCHING)

Part I: Project Information

Project title:	HFC phase-down plan preparation	
Country:	Plurinational State of Bolivia (Bolivia)	
Implementing	UNIDO	
Implementation period:	July 2021 – June 2023	
Funding requested:		
Agency	**Sector**	**Funding requested (US$)***
UNIDO	Overarching	170,000

*Given the absence of the approved cost guidelines for HFC phase-down, and in particular a cost structure for project preparation requests, the agreed funding levels for HPMP stage I project preparation are applied (Decision 55/27).

Part II: Prerequisites for submission

Item	Yes	No
1. Official endorsement letter from Government for choice of agency	☒	☐
2. Kigali Amendment ratified	☒	☐

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

1. Montreal Protocol HFC phase-down target to be met in stage I of the HFC phase-down plan			
Commitment	Freeze 10% reduction	Year	2024 2029
☐ Servicing only	☐ Manufacturing only	☒ Servicing and manufacturing	

2. Brief background on previous activities related to the Kigali amendment and the HFC phase-down, as well as HPMP stages

Please provide a brief background on the Enabling Activities project, when it was approved, a brief description of the progress in implementation and expected end date.

In response to Decision 79/46 of the Executive Committee on guidelines for Enabling Activities for HFC Phase down, the Government of Plurinational State of Bolivia (Bolivia) submitted a proposal to the 82nd Executive Committee meeting of the Multilateral Fund, which approved the project for Bolivia's Enabling Activities for HFC Phase Down by a sum of US$150,000, to facilitate early ratification of the Kigali Amendment and undertake activities to meet the initial obligations of the Amendment. The specific objectives of the Enabling Activities Project were mainly to:

- Achieve a broader understanding of the Kigali amendment provisions and to prepare legislative basis for the ratification

- Develop a required regulatory package to set up import/export licensing system for HFC and HFC's alternatives
- Provide basic training to the GOC, servicing and assembly sectors and end-users for addressing the emerging responsibilities of the Kigali Amendment.
- Identify the needs of the servicing sector that would facilitate the HFC phase-down.
- Enhance the expertise of service sectors and end-users for adopting alternatives of low-GWP and zero-GWP and safe handling of flammable refrigerants.

It is noteworthy that the implementation of the Enabling Activities is being implemented using the existing national infrastructure and institutional setting already established for ODS phase-out activities. It is scheduled to be completed in June 2021. On October 10, 2019, through Law No. 1248-2019, the Chamber of Deputies approved the Kigali Amendment and it was ratified on October 9, 2020. The EA project achieved the following outputs and results:

- An inter-institutional event was held to explain the benefits of the ratification of the Kigali Amendment, in which high-level officials from the Ministry of the Environment, representatives of the Chamber of Deputies and of relevant public and private establishments participated. The Law 1248 was approved in October 2019 for the ratification of the Kigali Amendment in Bolivia as a result of this event.
- In September 2019, the regulation R.A. 025/2019 for the control of the import and trade of substances regulated by the Montreal Protocol, included the HFCs, as a previous step to the modification of Supreme Decree DS 27421 referring to the ODS Licensing and Quota System. Through this regulation, the Government Ozone Commission, in coordination with the Customs Authority and importers, registers and monitors HFC imports.
- Understanding of the needs of the servicing sector for further planning of the activities related to the adoption of low-GWP and zero-GWP replacement technologies to HFCs.
- Training for 70 technicians for handling/ use of new alternative technologies in RAC sector with high energy efficiency and low or no GWP.
- For the III International Air Conditioning, Ventilation, Refrigeration and Heating Exhibition (Expo Frio Calor Bolivia) that will take place in October 2020 in Santa Cruz, the Government Ozone Commission, in coordination with the Organizing Committee, agreed to present 'Energy Efficiency' as the theme of the event; this will involve the distribution of technical information on energy efficient technologies.
- Bolivia participated in three Twinning of National Ozone Officers and Energy Policymakers for Energy Efficient and Climate Friendly Cooling workshops (Paris/2019, Guatemala/2018 and Quito/2018), which aimed to jointly build the capacity of National Ozone Officers and national energy policymakers for linking energy efficiency with Montreal Protocol objectives in support of the Kigali Amendment, as well as discussed policies to ensure an energy efficient RAC sector.

3. Current progress in implementation of Enabling Activities for HFC phase-down
Budget: All funds for EA were utilized (US$ 150,000)

Activity	Description	Status	Implementing agency
Activities to support the early ratification of the KA	Bill ratified by competent body	Completed	UNEP
Institutional arrangements	Reviewing operating codes and standards for the efficient use of HFCs and ODS alternatives in the entire value chain.	In Progress	UNEP

Review of licensing systems and data reporting	Preparing harmonized tariff codes according to HFCs commitments, with special attention to HFC blends and review of the national mechanisms used for ODS reporting to include HFCs	In Progress. Regulation R.A. 025/2019 for control of the import and trade of substances regulated by the Montreal Protocol, included the HFCs. The Government Ozone Commission, in coordination with the Customs Authority and importers, registers and monitors HFC imports.	UNEP
Identify the needs of the servicing sector that would facilitate the HFC phase-down and enhance the expertise of service sectors and end-users for adopting alternatives of low-GWP and zero-GWP and safe handling of flammable refrigerants.	Training for 70 technicians for handling/ use of new alternative technologies in RAC sector with high energy efficiency and low or no GWP.	In progress	UNEP
Awareness, communication and dissemination	Awareness raising of stakeholders (public and private sectors) on HFC phase-down and energy efficiency (EE) improvement options	In progress mainly for EE improvements	UNEP

4. Description of information that needs to be gathered and updated. Explain why this has not been undertaken during the implementation of activities related to the Kigali Amendment and HFC phase-down.

Information needed	Description	Agency
Updated ODS alternatives data and subsector where are use.	Review available data and additional sector-specific data collection from 2016 through questionnaires and interviews as this was not included in the enablement activities and data collection from previous ODS alternatives only covered data for the period 2012-2015. This includes data related to the subsector, number and age of equipment in the subsectors, energy efficiency, and prices of alternative equipment.	NOU

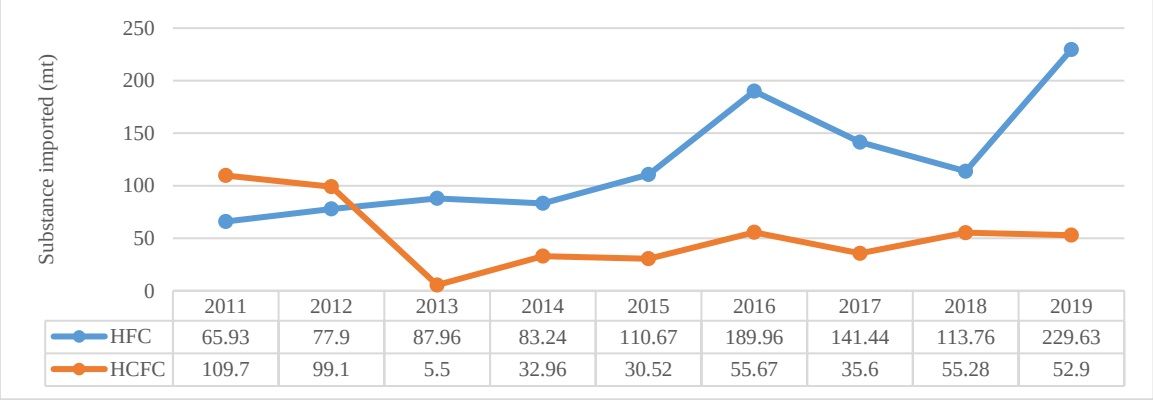
5. Overview of estimated import of ODS alternatives 2015 – 2019 in Metric Ton per year.

Substance	2015	2016	2017	2018	2019
HFC pure					
HFC 134a	91.80	106.42	81.73	84.13	119.18
HFC blends					
R 404A	9.27	31.87	15.26	21.11	51.37
R 407C	4.52	13.18	3.16	0.00	6.35
R 410A	4.51	17.25	22.17	8.18	40.11

R 507A	0.57	3.39	0.00	0.34	12.62
R 417A	0.00	17.85	19.12	0.00	0.00
HFC total (pure + blends)	**110.67**	**189.96**	**141.44**	**113.76**	**229.63**
Natural refrigerants					
HC-600a	0.00	0.00	2.26	9.91	1.95

Import data confirms that high GWP HFCs imports continue growing rapidly. In that respect, the main HFC refrigerant imported in 2011-2019 period was HFC-134a (63.57%), as it is widely used in domestic and commercial refrigeration and mobile air conditioning, followed by the HFC-404A refrigerant (17.85%), which is used in low temperature refrigeration, where HCFC-22 was also extensively. They were followed by HFC-410A (10.42%), used in fixed air conditioners. These three substances represent 91.84% of the total alternatives contained in RAC equipment. The import of these substances alternatives has increased while that of HCFC-22 has decreased.

HFC consumption behavior vs HCFC consumption per year



Source: National Custom of Bolivia and Ozone Governmental Commission CGO.

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

- ***Domestic Refrigeration*** mainly uses R-134a and R-600a as refrigerants. HC has been contained in imported equipment since 2013, showing an incremental behavior in the forthcoming years. R-134a has a discontinuous behavior of consumption, and in 2017, it was present primarily in spare parts such as compressors.

- ***Commercial refrigeration.***
  - ✓ **Stand-alone.** Stand-alone equipment is the leading subsector in the commercial refrigeration subsector of Bolivia. Equipment imports had a significant import-increase in 2017 and then a reduction in imports in 2018. The most common refrigerants used in this sector are R-134a and R-404A, but statistics show that in the last years, R-134a has been gradually displaced by R-404A.
  - ✓ **Condenser units.** Condensing units can be fully imported as equipment or imported as spare parts to be assembled in the country. In this case, Customs reported additional spare parts that could belong to refrigeration condensing units, and practically all of these units have R-404A as refrigerant.

- ✓ **Centralized system.** Refrigeration Centralized systems are imported in smaller amounts than stand-alone equipment and condenser units. Lately, imports of these systems have grown. Refrigerant found in this equipment in 2016 and 2017 had R-404A as refrigerant.

- ***Industrial refrigeration.*** Industrial refrigeration consumes mainly R-717. However, during the last years, R404A displaced R-717 probably due to the health and safety risks associated to work with ammonia as refrigerant. Except for the 2013-amount of refrigeration imported units, the next years present an almost.

- ***Transport refrigeration. A***s well as domestic refrigeration and stand-alone equipment, transport refrigeration presented an increase in imports in 2018. The refrigerant gas consumed in this subsector is mainly R404A. However, units coming from the USA have potentially R-452A as a refrigerant.

- ***Residential AC.*** Residential AC had a considerable amount of imports in 2017. However, 2018 presented an essential lessening of importations. Most common refrigerants used in residential AC are R-22, R-407C and R-410A. The later refrigerant predominates in the imports from 2016 to 2018.

- ***Chillers.*** In 2015, the data collected by the HFC Survey, performed to a few companies importing chillers, showed that in all (100%) companies visited, the refrigerant used was R-22. Nonetheless, imports also show other refrigerants such as R-407C, R-410A, and R-717.

- ***Transport AC.*** Transport AC is related mainly to AC systems in the automobile sector. Until 2018, the most common refrigerant gas used was R-134a. It is expected that the forthcoming years could present new substances such as HFO.

7. Activities to be undertaken for project preparation and funding

Activity	Indicative funding (US $)	Agency
1- Ground work: Review of documents and existing regulations as well as measure new data on HFCs and other ODS alternatives. Prepare questionnaires for stakeholder interviews and conduct interviews with relevant stakeholders (including government, private sector, civil society organizations, vocational centers, academic communities) to update available data on ODS alternatives. Consultations for the integration of national regulations and procedures for KA implementation and consolidation of technical capacities in the institutions involved in HFC control	USD 20,000	UNIDO
2- Capacity building activities related to RAC sector activities and enforcement: a) Review and assessment of innovative tools and approaches to build the capacity of relevant actors, b) update of training curricula of vocational schools, university and customs, online training and certification tools; c) public procurement policies, potential impact of incentives and taxes, gender considerations, d) HFC-free labeling, equipment inventories / logbooks, potential of not-in-kind alternatives etc.	USD 25,000	UNIDO
3 - Preparation of initial HFC related policies and legislation in line with the draft HFC phase-down strategy and the overview table of HFC policy and legislative measures already in place, planned to be put in	USD 20,000	UNIDO

place and not planned to be put in place. This will consider the HFC policy and legislative measures recommended for early implementation in UNEP's publication on the same topic including the mandatory reporting by HFC importers / exporters, HFC emission control measures and awareness raising of stakeholders.		
4- Conducting studies, stakeholders' workshops and assessment related to the promotion of energy efficiency in all sectors, by: a) Promoting upgrades for mandatory and voluntary standards; b) Promoting the replacement of RAC equipment in homes, businesses and industry; c) Promoting efficient practices of operation, maintenance and installation in RAC systems; d) Developing detailed studies for RAC equipment characterization and project portfolio evaluation for energy efficiency upgrades.	USD 25,000	UNIDO
5 - HFC phase-down strategy development: Technical and legal experts to prepare all legal and technical documents, consult all key stakeholders and develop detailed strategy, including: a) assessment and development/update trainings and certification scheme for the use of flammable refrigerants, b) developing training plan and organizing workshops with main stakeholders and training institutions; c) set up an ozone committee within the NOU bringing together representatives of the Department of the Environment, the ozone focal point within the customs, the Ministry of Commerce, importers and the association refrigeration technicians with the responsibility of monitoring HFC consumption d) Enhance the recovery and recycling of refrigerants and improve the monitoring and evaluation system of R&R practices	USD 30,000	UNIDO
6 - Communication and outreach plan: Preparation of a comprehensive communication and outreach plan in consultation with key stakeholders including RAC associations and media. The plan will focus on technology and policy awareness raising to influence the investment and user behavior.	USD 30,000	UNIDO
7. Validation: Consultations, review and validation of the prepared strategy	USD 20,000	UNIDO
TOTAL	**USD 170,000**	

8. How will activities related to HPMP implementation be considered during project preparation for the HFC phase-down management plan?

Synergies from ongoing and future HPMP activities will be assessed in an integrated manner and incorporated into the HFC phase-down plan development. Furthermore, lessons learned from HPMP implementation will be taken into considered to the extent possible.

9. 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 trainees in vocational schools as well as female technicians for awareness-raising activities as well as training events on non-HFC ODS alternatives. The project preparation will aim to advocate the importance of gender-responsive actions and provisions in developing HFC phase-down plan. 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 – Ecuador

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL
HFC PROJECT PREPARATION REQUEST FORM
HFC Phase-down Management plan (OVERARCHING)

Part I: Project Information

Project title:	HFC phase-down plan preparation	
Country:	Republic of Ecuador (Ecuador)	
Implementing	UNIDO	
Implementation period:	July 2021 – June 2023	
Funding requested:		
Agency	**Sector**	**Funding requested (US$)***
UNIDO	Overarching	190,000

*Given the absence of the approved cost guidelines for HFC phase-down, and in particular a cost structure for project preparation requests, the agreed funding levels for HPMP stage I project preparation are applied (Decision 55/27).

Part II: Prerequisites for submission

Item	Yes	No
1. Official endorsement letter from Government for choice of agency	☒	☐
2. Kigali Amendment ratified	☒	☐

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

3. Montreal Protocol HFC phase-down target to be met in stage I of the HFC phase-down plan			
Commitment	Freeze 10% reduction	Year	2024 2029
☐ Servicing only	☐ Manufacturing only	☒ Servicing and manufacturing	

4. Brief background on previous activities related to the Kigali amendment and the HFC phase-down, as well as HPMP stages

Please provide a brief background on the Enabling Activities project, when it was approved, a brief description of the progress in implementation and expected end date.

In response to Decision 79/46 of the Executive Committee on guidelines for Enabling Activities for HFC Phase down, the Republic of Ecuador (Ecuador) submitted a proposal to the 80th Executive Committee meeting of the Multilateral Fund, which approved the project for Ecuador's Enabling Activities for HFC Phase Down by a sum of US$150,000, to facilitate and support the country's ratification of the Kigali Amendment and to undertake specific initial activities that help fulfil the initial obligations with regard to hydrofluorocarbon (HFC) phase-down in line with the Kigali Amendment. The objectives of the project were mainly to:

(i) Provide policy and technical support and guidance to the Government to facilitate the early ratification of the Kigali Amendment and enable the country to meet initial obligations with respect to the phase-out of hydrofluorocarbons (HFCs).
(ii) Help sensitize and maximize national stakeholders' ownership of their roles and responsibilities necessary for the successful implementation of the Kigali Amendment.
(iii) Strengthen the capacity of the National Ozone Unit, service workshops, customs officials, end-users, and other newly identified national partners to address the new responsibilities of the Kigali Amendment.
(iv) Support the Government in reviewing existing mechanisms for HCFC import/export, data collection, and reporting to establish a licensing and quota system as well as a monitoring and reporting mechanism for HFCs and alternatives to HFCs and their equipment.
(v) Support the Government to revise the national customs harmonization codes for commonly imported HFCs and their alternatives to ensure proper tracking and recording of imports/exports of individual HFCs/alternatives.
(vi) Support the Government in the development of the software for the online import/export quota and licensing system for HFCs and their alternatives and their equipment.

It is noteworthy that the implementation of the Enabling Activities is being implemented using the existing national infrastructure and institutional setting already established for ODS phase-out activities. The Government of Ecuador ratified the Kigali Amendment on 22 January 2018 and the project was completed in December 2020. Apart from the ratification of the Amendment, the EA project achieved the following outputs and results:

a) The country carried out an assessment that included recommendations on policy measures, technical assistance activities and investment activities, which were used as a roadmap for the implementation of the Kigali Amendment.

b) Sensitization of national stakeholders and the general public on the importance and benefits of the Kigali Amendment. National stakeholders understood their new roles and responsibilities under the implementation of the Kigali Amendment.

c) The NOU has strengthened the partnership with the Ministry of Energy and Non-Renewable Natural Resources to identify the linkage between the HFC phase-down and energy efficiency.

d) The HFC licensing system has been in force and operational since January 1st, through COMEX Resolution No. 023-2017 of August 22, 2017.

e) Development and implementation of an online import/export licensing system for HFCs and their equipment containing HFCs.

f) Four online workshops were carried out on ODS-free and low-emission technologies for air conditioning and refrigeration applications in supermarkets, shopping malls, hotels and hospitals, fast food, meat processing and dairy production sectors.

g) Two online master classes were held for senior RAC systems professionals on the latest technology trends, multilateral agreement development and service best practices.

5. Current progress in implementation of Enabling Activities for HFC phase-down
Budget: All funds for EA were utilized (US$ $112,286.40)

Activity	Description	Status	Implementing agency
Activities to support	Kigali Amendment ratified by the country on	Completed	UNEP

the early ratification of the KA	22 January 2018.		
Institutional arrangements	Automation of the import control system for substances controlled by the Montreal Protocol.	Completed	UNEP
Review of licensing systems and data reporting	COMEX Resolution 023-2017 of December 2017 included 11 subheadings corresponding to HFCs to the list of restricted substances under prior import/export license. Importers must submit a quarterly report of HCFC's and HFC's imported quantities.	Completed.	UNEP
Awareness raising of relevant stakeholders on HFC phase-down and energy efficiency options	The staff of the Energy Efficiency Project Management and Promotion Department of the Ministry of Energy and Non-Renewable Natural Resources was trained in aspects related to the Kigali Amendment.	Completed.	UNEP
Specific training in selected alternatives considering energy efficiency advantages of each RAC sub-sector for end-users (chain of hotels, supermarkets, shopping malls, etc.) and manufacturing industries.	Four online workshops were carried out on ODS-free and low-emission technologies for air conditioning and refrigeration applications in supermarkets, shopping malls, hotels and hospitals, fast food, meat processing and dairy production sectors. Two online master classes were held for senior RAC systems professionals on the latest technology trends, multilateral agreement development and service best practices	Completed.	UNEP
Organize round tables to analyze the adoption of national standards on the safe use of flammable refrigerants and disseminate national standards on the safe use of flammable refrigerants	Three proposals for technical regulations related to the refrigeration and air conditioning (RAC) sector: - labeling of refrigerant cylinders - good refrigeration practices and safe handling of hydrocarbons, - design of commercial refrigeration equipment based on alternative substances. 1 manual of good refrigeration practices, based on the structure of the certification scheme for technicians	Completed	UNEP
Awareness, communication and dissemination	Awareness raising of stakeholders (public and private sectors) on HFC phase-down and energy efficiency (EE) improvement options	In progress	UNEP

6. Description of information that needs to be gathered and updated. Explain why this has not been undertaken during the implementation of activities related to the Kigali Amendment and HFC phase-down.

Information needed	Description	Agency

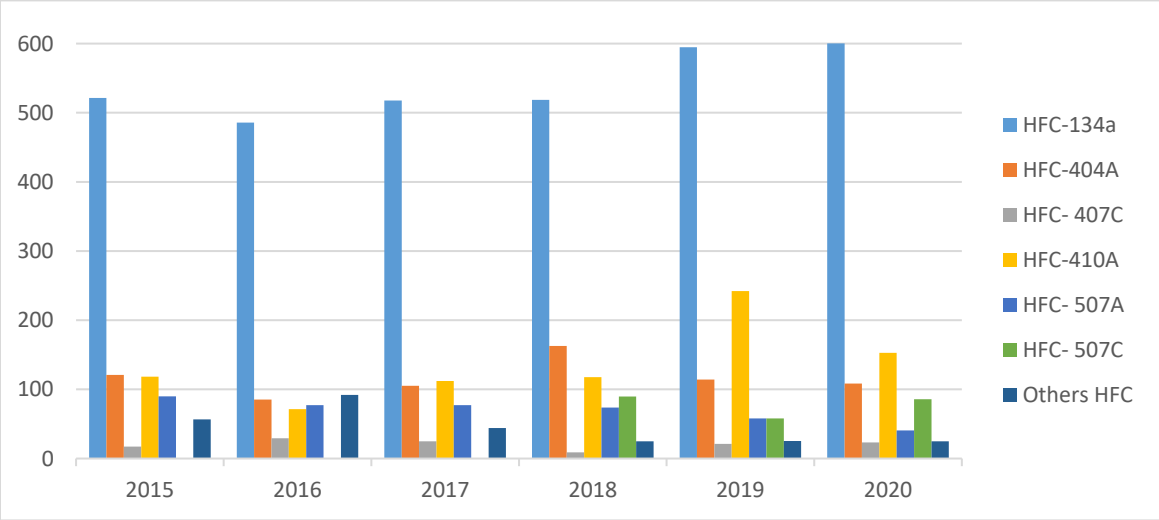
Develop a mapping study to obtain information on the main characteristics of the RAC sector, users and location in the country.	To determine the existing stock of appliance systems in domestic, commercial and industrial RAC sector, its main characteristics and use by regions in the country, to make predictions of emissions, and mitigation actions in each subsector and by regions.	NOU

7. Overview of estimated import of ODS alternatives 2015 – 2020 in Metric Ton per year.

Substance	2015	2016	2017	2018	2019	2020
HFC-134a	521.37	485.81	517.7	518.64	594.79	600.18
HFC-404A	120.95	85.23	105.10	162.72	114.23	108.43
HFC- 407C	17.27	29.20	25.02	8.92	21.17	23.38
HFC-410A	118.43	71.48	112.10	117.59	242.19	152.95
HFC- 507A	89.80	77.09	77.09	73.81	57.89	40.65
HFC- 507C	0.00	0.00	0.00	89.66	58.02	85.72
Others HFC	56.71	92.06	44.06	24.97	25.40	24.99
HFC total	**924.53**	**840.87**	**881.07**	**996.31**	**1,113.69**	**1,036.30**

After the HCFCs freeze in 2013, HFCs, mainly those that replace R-22 in high, medium and low temperature applications, showed an increase in imports, such as R-410A refrigerants in air conditioning, and R-404A, R-507A and R-507C in low temperature applications. R-134a has shown stable behavior during the years analyzed, and is the most imported HFC refrigerant, which is used mainly in domestic refrigeration and mobile air conditioning.

Total consumption per HFC refrigerant (Metric tons).



Source: : Ministry of Production, Foreign Trade, Investment and Fisheries (MPCEIP)

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

HFCs are the main HCFC alternatives which are currently imported in Ecuador. Use of other alternatives such as hydrocarbons or natural refrigerants is currently limited in the country. Three main refrigerants consumed in Ecuador, in terms of metric tons, are the same refrigerants in importance in terms of the impact in the climate change, due to the quantity and the high GWP of the HFC-134a, HFC-410A, which show a growing trend due to the phase-down of HCFC-22.

For residential air conditioning, the trend is to change from HCFC-22 to R-410A, while in domestic refrigeration and mobile air conditioning, HFC-134a has been in use for some time. For HFC-134a, the consumption is increasing for both domestic refrigeration and mobile air conditioning.

For commercial refrigeration are used R-404A, R-507A and R-507C. The consumption of hydrocarbons in domestic refrigeration is also increasing, but not to levels as to affect the consumption of HFC-134a in that sector.

Estimation of refrigerant use in servicing in different RAC sub-sector (mt).

Subsector		**Estimation of refrigerant use in servicing (mt)**						
		HCFC-22	**HFC-410A**	**HFC-134a**	**HFC-404A**	**HC-290**	**Others**	**Total**
Domestic refrigeration		0.00	0.00	89.22	0.00	0.00	1.50	90.72
Commercial refrigeration	Stand-alone	0.00	0.00	59.48	11.42	1.43	10.88	83.21
	Condenser units	24.12	0.00	0.00	43.41	0.00	34.77	102.30
	Centralized system	0.00	0.00	0.00	22.85	0.00	34.77	57.62
Industrial refrigeration		48.24	0.00	0.00	19.42	0.00	46.36	114.02
Transport refrigeration		0.00	0.00	14.87	11.42	0.00	0.00	26.29
Residential AC		96.48	145.31	0.00	0.00	0.00	20.16	261.95
Other AC		48.24	96.87	0.00	0.00	0.00	13.44	158.55
Chillers		12.06	0.00	14.87	5.71	0.00	1.51	34.15
Transport AC		0.00	0.00	118.96	0.00	0.00	0.82	119.78
Others		12.06	0.00	0.00	0.00	0.08	0.00	12.14
Total use		**241.21**	**242.19**	**297.39**	**114.23**	**1.50**	**164.21**	**1060.73**

The increase in ODS-alternatives is mainly due to the introduction of new equipment, since the country does not have a restriction to import HFC-based equipment. The national industry is reconverted (in domestic refrigeration to HC), while the RAC commercial sector it still consumes HFCs, but the market responds more to imported products.

9. Activities to be undertaken for project preparation and funding

Activity	**Indicative funding (US $)**	**Agency**
1- Ground work: Review of documents and existing regulations as well as measure new data on HFCs and other ODS alternatives. Organize and carry out forums and roundtables of sectorial work with relevant stakeholders, including government, private sector, trade unions, associations, civil society organizations, vocational centers, academic communities, among others to update available data on ODS alternatives. Consultations for the elaboration of a comprehensive national policy for the application of the Montreal Protocol, regulations and national procedures for its implementation, including the Kigali Amendment. Develop a mapping study to obtain information on the main characteristics of the RAC sector, users and location in the country.	USD 45,000	UNIDO

2- Capacity building activities related to RAC sector activities and enforcement: a) Review and assessment of innovative tools and approaches to build the capacity of relevant actors, b) Mange update of training curricula of vocational schools, university and customs, online training and certification tools; c) develop a policy proposal that includes a roadmap and impact analysis, which considers the convenience of creating tax or fiscal incentives or reducing tariffs in the purchase of equipment and tools for the management of alternative refrigerants, as well as the implementation of refrigeration and air conditioning projects with low impact refrigerants; d) public policies of gender considerations.	USD 30,000	UNIDO
3- Conducting studies, stakeholders' workshops and assessment related to the promotion of energy efficiency in all sectors, by: a) Promoting upgrades for mandatory and voluntary standards; b) Promoting the replacement of RAC equipment in homes, businesses and industry; c) Promoting efficient practices of operation, maintenance and installation in RAC systems; d) Developing detailed studies for RAC equipment characterization and project portfolio evaluation for energy efficiency upgrades.	USD 30,000	UNIDO
4 - HFC phase-down strategy development: Technical and legal experts to prepare all legal and technical documents, consult all key stakeholders and develop detailed strategy, including: a) assessment and development/update trainings and certification scheme for the use of flammable refrigerants, b) developing training plan and organizing workshops with main stakeholders and training institutions; c) Enhance the recovery and recycling of refrigerants and improve the monitoring and evaluation system of R&R practices.	USD 30,000	UNIDO
5 - Communication and outreach plan: Preparation of a comprehensive communication and outreach plan in consultation with key stakeholders including RAC associations and media. The plan will focus on technology and policy awareness raising to influence the investment and user behavior.	USD 35,000	UNIDO
6 - Validation: Consultations, review and validation of the prepared strategy	USD 20,000	UNIDO
TOTAL	**USD 190,000**	

10. How will activities related to HPMP implementation be considered during project preparation for the HFC phase-down management plan?

Synergies from ongoing and future HPMP activities will be assessed in an integrated manner and incorporated into the HFC phase-down plan development. Furthermore, lessons learned from HPMP implementation will be taken into considered to the extent possible.

11. 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 trainees in vocational schools as well as female technicians for awareness-raising activities as well as training events on non-HFC ODS alternatives. The project preparation will aim to advocate the importance of gender-responsive actions and provisions in developing HFC phase-down plan. 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 – Nicaragua

MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL
HFC PROJECT PREPARATION REQUEST FORM
HFC Phase-down Management plan (OVERARCHING)

Part I: Project Information

Project title:	HFC phase-down plan preparation	
Country:	Nicaragua	
Implementing	UNIDO	
Implementation period:	July 2021 – June 2023	
Funding requested:		
Agency	**Sector**	**Funding requested (US$)***
UNIDO	Overarching	170,000

*Given the absence of the approved cost guidelines for HFC phase-down, and in particular a cost structure for project preparation requests, the agreed funding levels for HPMP stage I project preparation are applied (Decision 55/27).

Part II: Prerequisites for submission

Item	Yes	No
1. Official endorsement letter from Government for choice of agency	☒	☐
2. Kigali Amendment ratified	☒	☐

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

3. Montreal Protocol HFC phase-down target to be met in stage I of the HFC phase-down plan			
Commitment	Freeze 10% reduction	Year	2024 2029
☐ Servicing only	☐ Manufacturing only	☒ Servicing and manufacturing	

4. Brief background on previous activities related to the Kigali amendment and the HFC phase-down, as well as HPMP stages

Please provide a brief background on the Enabling Activities project, when it was approved, a brief description of the progress in implementation and expected end date.

In response to Decision 79/46 of the Executive Committee on guidelines for Enabling Activities for HFC Phase down, the Government of Nicaragua submitted a proposal to the 81st Executive Committee meeting of the Multilateral Fund, which approved the project for Nicaragua's Enabling Activities for HFC Phase Down by a sum of US$150,000, to facilitate and support the country's ratification of the Kigali Amendment and to undertake specific initial activities that help fulfil the initial obligations with regard to hydrofluorocarbon (HFC) phase-down in line with the Kigali Amendment. The objectives of the project were mainly to:

(vii) Provide policy and technical support and guidance to the Government to facilitate the early ratification of the Kigali Amendment and enable the country to meet initial obligations with respect to the phase-out of hydrofluorocarbons (HFCs).

(viii) Help sensitize and maximize national stakeholders' ownership of their roles and responsibilities necessary for the successful implementation of the Kigali Amendment.

(ix) Strengthen the capacity of the National Ozone Unit, service workshops, customs officials, end-users, and other newly identified national partners to address the new responsibilities of the Kigali Amendment.

(x) Support the Government in reviewing existing mechanisms for HCFC import/export, data collection, and reporting to establish a licensing and quota system as well as a monitoring and reporting mechanism for HFCs and alternatives to HFCs and their equipment.

(xi) Support the Government to revise the national customs harmonization codes for commonly imported HFCs and their alternatives to ensure proper tracking and recording of imports/exports of individual HFCs/alternatives.

It is noteworthy that the implementation of the Enabling Activities is being implemented using the existing national infrastructure and institutional setting already established for ODS phase-out activities. The Government of Nicaragua ratified the Kigali Amendment, which entered into force on September 30, 2020 by Presidential Decree No. 8702. The EA project achieved the following outputs and results:

h) Nicaragua carried out an assessment that included recommendations on policy measures, technical assistance activities and investment activities, which were used as a roadmap for the implementation of the Kigali Amendment.

i) Sensitization of national stakeholders and the general public on the importance and benefits of the Kigali Amendment. National stakeholders understood their new roles and responsibilities under the implementation of the Kigali Amendment.

j) The NOU has strengthened the partnership with the Ministry of Energy and Mines to identify the linkage between the HFC phase-down and energy efficiency.

k) All controlled substances by Montreal Protocol, including HFCs, were included in the registry of import/export license, duly established under Decree 91-2000 “Regulation for the ODS Control” and Resolution CNRCST-001-2018 referring to the types and requirements of licenses, published in the Official Journal No. 58 on March 22, 2018.

l) Different awareness and training events were held for RAC technicians, end users and academia, on the gradual elimination of HFCs, advantages of energy efficiency and safe handling of alternatives to HFCs.

5. Current progress in implementation of Enabling Activities for HFC phase-down
Budget: All funds for EA were utilized (US$ $170,000)

Activity	Description	Status	Implementing agency
Activities to support the early ratification of the KA	Kigali Amendment ratified by the country.	Completed	UNIDO
Institutional arrangements	Nicaragua is in the process of adapting and updating the normative instruments for the establishment of the baseline and quotas for the HFCs consumption.	In progress	UNIDO

Review of licensing systems and data reporting.	Nicaragua has a licensing system, duly established under Decree 91-2000 "Regulation for the ODS Control" and Resolution CNRCST-001-2018 referring to the types and requirements of licenses, published in the Official Journal No. 58 on March 22, 2018, which included pure or blended refrigerant substances, including HFCs, in the registry of import/export license.	Completed.	UNIDO
Awareness raising of relevant stakeholders on HFC phase-down and specific training in selected alternatives considering energy efficiency advantages of each RAC sub-sector	- 50 students and technicians of the RAC sector sensitized in the safe handling of flammable refrigerants and energy efficient technologies. - Two workshops were held on June 11, 2019, which were aimed to address the RAC servicing sector and academia with a total of 100 participants. The topics covered were: the Kigali Amendment and alternative environmentally friendly and more energy-efficient technologies in the RAC sector. These two events were led by an international expert on the subjects. - On May 25, 26, 27, 28 and 29, 2020, one virtual workshop on safe handling of flammable refrigerants and energy efficient technologies were held, with support of International consultant, and attended by 25 RAC technicians and instructors from all over the country. - From June 29 to July 3, 2020, one virtual workshop on safe handling of flammable refrigerants and energy efficient technologies were held, with support of International consultant. It was attended by 86 RAC technicians from all over the country. - In April 2020, one training workshop on measures and guidelines for conducting energy audits in RAC equipment, with the support of the Ministry of Energy and Mines. It was attended by 25 technicians from areas of property control and maintenance of the most recognized public institutions in the country. - NOU representatives participated in the working session as a member of the	Completed.	UNIDO

	Technical Committee of Normalization for the elaboration of two Central American technical standards for energy efficiency of inverter-type air conditioning equipment.		
Awareness, communication and dissemination	- Awareness raising of stakeholders (public and private sectors) on HFC phase-down and energy efficiency (EE) improvement options. - An event for the exchange of experiences with women from the RAC sector on the country's commitments regarding the ratification of the Kigali Amendment. 25 women participated in the event.	Completed	UNIDO

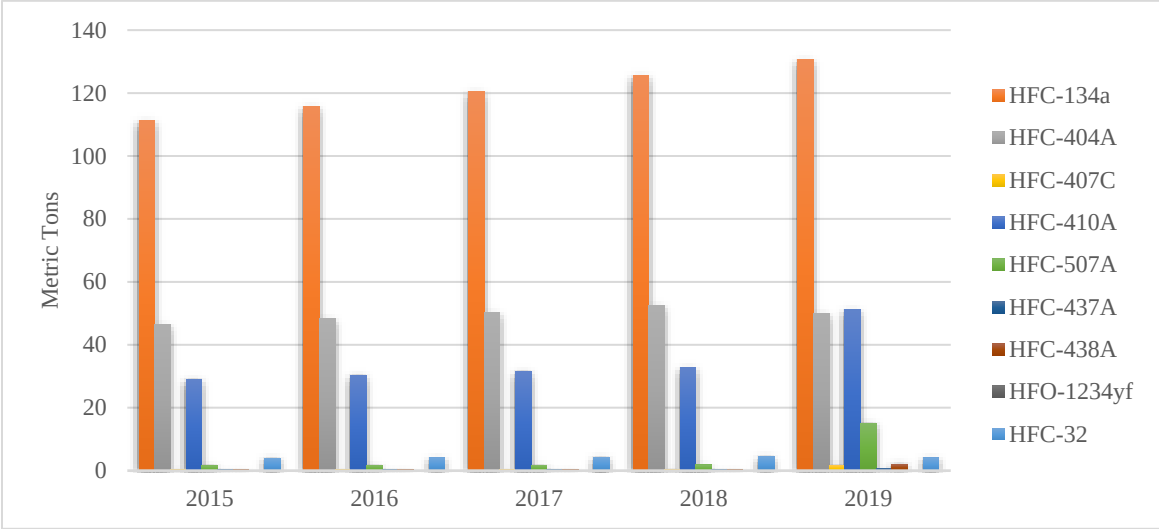
6. Description of information that needs to be gathered and updated. Explain why this has not been undertaken during the implementation of activities related to the Kigali Amendment and HFC phase-down.

Information needed	Description	Agency
Updated ODS alternatives data and subsector where are use.	Review available data and additional sector-specific data collection from 2016 through questionnaires and interviews as this was not included in the enablement activities and data collection from previous ODS alternatives only covered data for the period 2012-2015. This includes data related to the subsector, number and age of equipment in the subsectors, energy efficiency, and prices of alternative equipment.	NOU

7. Overview of estimated import of ODS alternatives 2015 – 2019 in Metric Ton per year.

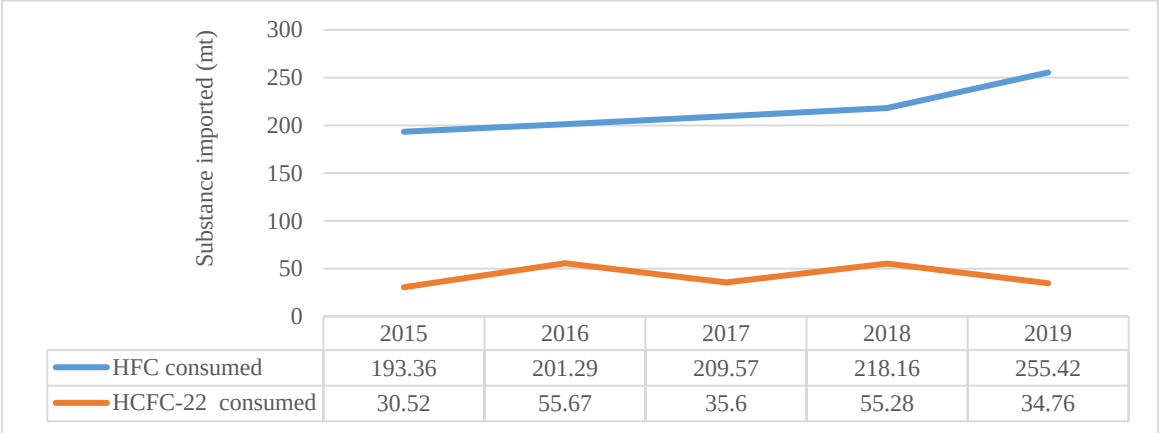
Substance	2015	2016	2017	2018	2019
HFC-134a	111.2	115.76	120.51	125.45	130.59
HFC-32	4.00	4.16	4.33	4.51	4.09
HFC-404A	46.43	48.33	50.32	52.38	49.96
HFC-407C	0.45	0.47	0.49	0.51	1.76
HFC-410A	29.08	30.27	31.51	32.81	51.17
HFC-507A	1.65	1.72	1.79	1.86	15.10
HFC-437A	0.34	0.35	0.37	0.38	0.70
HFC-438A	0.21	0.22	0.23	0.24	2.05
HFO-1234yf	0.00	0.01	0.02	0.02	0.02
HFC total	**193.36**	**201.29**	**209.57**	**218.16**	**255.42**

Total consumption per HFC refrigerant (Metric tons).



Source: Nicaragua, NOU.

HFC consumption behavior vs HCFC consumption per year



	2015	2016	2017	2018	2019
HFC consumed	193.36	201.29	209.57	218.16	255.42
HCFC-22 consumed	30.52	55.67	35.6	55.28	34.76

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

Import data confirms that high GWP HFCs imports continue growing rapidly. In that respect, the main HFC refrigerants imported in 2015-2019 period was HFC-134a, as it is widely used in domestic and commercial refrigeration and mobile air conditioning, followed by the HFC-404A refrigerant, which is used in low temperature refrigeration, where HCFC-22 was also extensively. They are followed by HFC-410A, used in air conditioners. The import of these substances alternatives has increased while that of HCFC-22 has decreased.

Description of the sector/sub-sector that use HFCs in the country.

- ✓ ***Domestic Refrigeration*** mainly uses R-134a and R-600a as refrigerants. HC has been contained in imported equipment since 2013, showing an incremental behavior in the forthcoming years.

- ✓ ***Commercial refrigeration.*** **Stand-alone equipment** is the leading subsector in the commercial refrigeration subsector of Nicaragua. The most common refrigerants used in this sector are R-134a and R-404A. **Condenser units** can be fully imported as equipment or imported as spare parts to

be assembled in the country. Practically all of these units have R-404A as refrigerant. **Refrigeration Centralized systems** Lately, imports of these systems have grown. Refrigerant found in this equipment is R-404A.

- ✓ ***Industrial refrigeration.*** Industrial refrigeration consumes mainly R-717. However, during the last years, R404A displaced R-717 probably due to the health and safety risks associated to work with ammonia as refrigerant.
- ✓ ***Transport refrigeration***. The refrigerant gas consumed in this subsector is mainly R404A.
- ✓ ***Residential AC.*** Most common refrigerants used in residential AC are R-22, R-407C and R-410A. The later refrigerant predominates in the imports since 2016.
- ✓ ***Chillers.*** **T**he refrigerant used was R-22. Nonetheless, imports also show other refrigerants such as R-407C, R-410A, and R-717.
- ✓ ***Mobile AC.*** Mobile AC is related mainly to AC systems in the automobile sector. Until 2018, the most common refrigerant gas used was R-134a. It is expected that the forthcoming years could present new substances such as HFO-1234yf.

9. Activities to be undertaken for project preparation and funding

Activity	Indicative funding (US $)	Agency
1- Ground work: Review of documents and existing regulations as well as measure new data on HFCs and other ODS alternatives. Prepare questionnaires for stakeholder interviews and conduct interviews with relevant stakeholders (including government, private sector, civil society organizations, vocational centers, academic communities) to update available data on ODS alternatives. Consultations for the integration of national regulations and procedures for KA implementation and consolidation of technical capacities in the institutions involved in HFC control	USD 20,000	UNIDO
2- Capacity building activities related to RAC sector activities and enforcement: a) Review and assessment of innovative tools and approaches to build the capacity of relevant actors, b) update of training curricula of vocational schools, university and customs, online training and certification tools; c) public procurement policies, potential impact of incentives and taxes, gender considerations, d) HFC-free labeling, equipment inventories / logbooks, potential of not-in-kind alternatives etc.	USD 40,000	UNIDO
3- Conducting studies, stakeholders' workshops and assessment related to the promotion of energy efficiency in all sectors, by: a) Promoting upgrades for mandatory and voluntary standards; b) Promoting the replacement of RAC equipment in homes, businesses and industry; c) Promoting efficient practices of operation, maintenance and installation in RAC systems; d) Developing detailed studies for RAC equipment characterization and project portfolio evaluation for energy efficiency upgrades.	USD 25,000	UNIDO
4 - HFC phase-down strategy development: Technical and legal experts to prepare all legal and technical documents, consult all key	USD 30,000	UNIDO

stakeholders and develop detailed strategy, including: a) assessment and development/update trainings and certification scheme for the use of flammable refrigerants, b) developing training plan and organizing workshops with main stakeholders and training institutions; c) set up an ozone committee within the NOU bringing together representatives of the Department of the Environment, the ozone focal point within the customs, the Ministry of Commerce, importers and the association refrigeration technicians with the responsibility of monitoring HFC consumption d) Enhance the recovery and recycling of refrigerants and improve the monitoring and evaluation system of R&R practices		
5 - Communication and outreach plan: Preparation of a comprehensive communication and outreach plan in consultation with key stakeholders including RAC associations and media. The plan will focus on technology and policy awareness raising to influence the investment and user behavior.	USD 35,000	UNIDO
6. Validation: Consultations, review and validation of the prepared strategy	USD 20,000	UNIDO
TOTAL	**USD 170,000**	

10. How will activities related to HPMP implementation be considered during project preparation for the HFC phase-down management plan?

Synergies from ongoing and future HPMP activities will be assessed in an integrated manner and incorporated into the HFC phase-down plan development. Furthermore, lessons learned from HPMP implementation will be taken into considered to the extent possible.

11. 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 trainees in vocational schools as well as female technicians for awareness-raising activities as well as training events on non-HFC ODS alternatives. The project preparation will aim to advocate the importance of gender-responsive actions and provisions in developing HFC phase-down plan. 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.).

SECTION 3

Country	Project Title	Extension Duration (months)	Reason for extending the duration	Official request for extension received?
Algeria	Enabling activities for HFC phase-down (ALG/SEV/84/TAS/83)	12	In line with decision 81/32(a), extension is requested for additional 12 months. Remaining activities to be implemented are as follows: Update of tariff codes and licensing system, elaborating report on HFC consumption, elaborating report on the situation of the RAC servicing sector, elaborating report on the legal, institutional and policy measures for the implementation of the Kigali amendment and assistance to be provided for attaining the ratification of the amendment.	Yes