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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Ninety-seventh Meeting
Montreal, 1–5 December 2025
Item 9(d) of the provisional agenda¹

PROJECT PROPOSAL: PARAGUAY

This document consists of the comments and recommendation of the Secretariat on the following project proposal:

Energy efficiency

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| <ul style="list-style-type: none">• Pilot project to maintain and/or enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (non-investment activities) | UNDP | Individual consideration |
|---|------|--------------------------|

¹ UNEP/OzL.Pro/ExCom/97/1

PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECT**Paraguay****PROJECT TITLE****IMPLEMENTING AGENCY**

Pilot project to maintain and/or enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (non-investment activities)	UNDP
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PROJECT OBJECTIVE

The project aims to establish an energy-efficiency labelling scheme and to introduce minimum energy performance standards (MEPS) for residential air-conditioning equipment through advancing technical and market analyses to establish relative savings benchmarks and other key performance indicators for residential air conditioners in Paraguay. It also aims to strengthen national capacity to assess energy consumption using internationally recognized testing methods, and to define a roadmap for the study and adoption of MEPS for these product categories. Ultimately, the initiative will set the conditions for the adoption and implementation of MEPS and labelling requirements for residential air conditioners.
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NATIONAL COORDINATING AGENCY	National Ozone Unit and the Ministry of the Environment and Sustainable Development of Paraguay
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LATEST ARTICLE 7 DATA (Annex F)	Year: 2024	787.25 mt	1,517,927 CO ₂ -eq tonnes
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Particulars	Non-investment activities
HFC used by the servicing sector (2024 country programme data)	777.25 mt 1,485,728 CO ₂ -eq tonnes
Project duration:	36 months
Initial amount requested:	US \$311,000
Final project cost:	US \$211,500
Requested grant:	US \$211,500
Implementing agency support costs:	US \$19,035
Total project cost to the Multilateral Fund:	US \$230,535
Energy-efficiency savings (kWh/year):	n/a
Status of counterpart funding (Y/N):	N
Project monitoring milestones included (Y/N):	Y
MEPS available for the relevant sector (Y/N):	N

SECRETARIAT'S RECOMMENDATION:	Individual consideration
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PROJECT DESCRIPTION

Background

1. On behalf of the Government of Paraguay, UNDP has submitted, in line with decision 91/65, a request for a pilot project to enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (non-investment activities), in the amount of US \$311,000, plus agency support costs of US \$21,770, as originally submitted.²

Status of implementation of energy efficiency-related activities funded by the Multilateral Fund

2. At the 94th meeting, a project for US \$120,000, plus agency support costs, was approved for Paraguay for additional activities to maintain energy efficiency in the servicing sector under decision 89/6,³ including stakeholder dialogue and cooperation to promote refrigeration and air-conditioning (RAC) equipment based on refrigerants with low global-warming potential (GWP) and define strategies to improve energy-efficiency labelling and minimum energy performance standards (MEPS) for RAC equipment in the form of a report with policy recommendations; capacity-building and training workshops, including the development of a draft curriculum on energy efficiency for vocational training institutes and basic technical schools; and information outreach and awareness-raising on the importance and advantages of offering, maintaining, and using low-GWP alternatives with higher energy-efficiency products and reading energy-efficiency labels and ODP and GWP values of refrigerants.

3. As of October 2025, UNEP has agreed on the workplan, timetable, and a small-scale funding agreement with the national ozone unit (NOU), while UNDP has drafted internal agreements with the NOU and local authorities and is awaiting their signatures.

Energy-efficiency pilot project

4. Paraguay ratified the Kigali Amendment on 1 November 2018, and stage I of the Kigali HFC implementation plan (KIP) was approved at the 94th meeting.⁴ The country has committed to reducing HFC consumption by 10 per cent of the baseline by 2029.

Policy, regulatory and institutional framework

5. The Government of Paraguay enacted Decree No. 6377/2011 to create the National Energy Efficiency Committee (CNEE), granting it powers and responsibilities under the coordination of the Vice Ministry of Mines and Energy (VMME), which is part of the Ministry of Public Works and Communications (MOPC), with the objective of establishing energy-efficiency criteria (standardization and labelling of products, replacement of sources, etc.). The CNEE commissions the National Institute of Technology, Standardization and Metrology (INTN) with the authority to promote and adopt actions for the harmonization and preparation of Paraguayan Standards within the Technical Committee for Standardization CTN 51 Energy Efficiency.

6. Under this institutional framework, seven regulations related to the RAC sector have been developed to date, and one mandatory energy-efficiency labelling programme for incandescent and fluorescent lamps, in line with Resolution No. 804 of 2018 of the Ministry of Industry and Commerce (MIC). The MEPS for RAC equipment have not been established yet.

7. The main objective of the CNEE is formulating the Efficient Energy Use Plan, as well as promoting regulations, energy labelling, source substitution, and awareness campaigns. The NOU, under the Ministry of the Environment and Sustainable Development (MADES), will work in cooperation with CNEE on

² As per the letter of 25 August 2025 from the Ministry of the Environment and Sustainable Development of Paraguay to UNDP.

³ Decision 94/20

⁴ Decision 94/49

regulations related to RAC equipment and on the implementation of the pilot project. The official focal point for the CNEE representing MADES is the Focal Point of the Vienna Convention and the Montreal Protocol, held by the Director General of the Directorate General of Air, under which the NOU operates.

HFC consumption and sector background

8. The HFC consumption baseline for Paraguay has been established at the level of 1,684,582 CO₂-equivalent (CO₂-eq) tonnes. Table 1 presents HFC consumption in Paraguay.

Table 1. Consumption of HFCs in Paraguay (2020–2024 Article 7 data)

HFC consumption	2020	2021	2022	2023	2024
All HFCs and HFC blends (mt)	723.21	455.94	735.12	730.46	786.72
All HFCs and HFC blends (CO ₂ -eq tonnes)	1,467,204	876,498	1,563,023	1,546,758	1,517,927
HFC-134a (mt)	426.16	270.42	369.29	412.43	359.30
HFC-134a (CO ₂ -eq tonnes)	609,407	386,706	528,078	589,771	513,801
R-410A (mt)	180.91	121.29	213.23	164.34	356.68
R-410A (CO ₂ -eq tonnes)	377,650	253,193	445,118	343,068	744,570

9. As reported at the 94th meeting, the reduction of HFC consumption observed in Paraguay from 2020 to 2021 was due to the COVID-19 pandemic and shipment delays. Since 2022, HFC consumption returned to levels above 700 mt, reflecting the increased demand for RAC appliances as well as the results of HCFC phase-out and sustained investments in the building industry. As the country is experiencing economic growth, demand for HFCs is expected to continue rising, posing a challenge to achieving consumption targets by 2029. In 2022, HFCs were mainly used in the mobile air-conditioning (MAC) subsector (38.9 per cent of total HFC consumption in mt and 26.3 per cent in CO₂-eq tonnes), followed by commercial refrigeration (21.7 per cent in mt and 32.8 per cent in CO₂-eq tonnes), and commercial and industrial air-conditioning (AC) (17.6 per cent in mt and in CO₂-eq tonnes).

10. As reported in the country programme data for 2024, consumption use was 1,517,928 CO₂-eq tonnes, which is 10 per cent below the HFC baseline (this figure does not include the reported use of 16,987 CO₂-eq tonnes in pre-blended polyols).

Project objectives

11. The pilot project aims to enhance the energy efficiency of RAC applications in Paraguay, supporting the KIP strategy, the comprehensive roadmap, and the national labelling strategy. Its objectives include: (i) supporting the coordinated work of competent entities for energy-efficiency issues related to the RAC sector, in order to advance in the formulation and implementation of labelling measures and MEPS for residential air conditioners, (ii) carrying out technical and market analyses and studies to establish the relative savings values and other benchmark energy-efficiency indicators for residential air conditioners; (iii) designing, developing and implementing an agreed MEPS for residential air conditioners and consequent labelling measures; and (iv) updating the national capacity for determining the energy consumption of residential air conditioners using the test methods established in current international standards (e.g. American Society of Heating, Refrigerating and Air-Conditioning Engineers and Ecodesign Directive) that can be adopted at the national level.

Proposed activities

12. The following activities were proposed by UNDP (as initially submitted):

- (a) *Institutional activities* (US \$20,000): Gather information on energy-efficiency labelling systems and MEPS for AC equipment in other countries and hold consultations with stakeholders, importers and consumers (US \$10,000); and conduct technical assistance

workshops, training and meetings to discuss regulatory developments and coordinate with relevant authorities and national standards bodies (US \$10,000);

- (b) *Technical and market analyses and studies* (US \$114,000): Develop a comparative evaluation of energy-efficiency levels and trends found in national, regional, and international markets and prepare a report on the estimated impact of the entry into force of energy labelling, classification regulations, and MEPS (US \$10,000); survey and analyze imported equipment, including energy consumption, and develop a comparative study and report (US \$50,000); and develop a database with baseline and results of energy consumption measurements and calculations of energy-efficiency indexes for 24 types and three different capacities of equipment available on the market, including four split-type, four window, and four portable AC models for the energy classification proposal and the development of MEPS for residential air conditioners (US \$54,000);
- (c) *Roadmap/Strategic plan for energy-efficiency labelling and MEPS* (US \$72,000): Conduct an analysis and prepare a report on regulatory gaps for the implementation of energy-efficiency labelling and the establishment of MEPS for residential AC units (US \$10,000); develop the MEPS and related labelling for residential air conditioners (US \$10,000); organize workshops to promote and create awareness and to negotiate the implementation of MEPS in agreement with importers and distributors of residential AC units (US \$30,000); develop awareness-raising materials (US \$10,000); and cover the costs of local travel (US \$12,000);
- (d) *Design, establishment, and dissemination of the updated MEPS and labels* (US \$60,000): Conduct data analysis and configure MEPS for residential air conditioners (US \$10,000); design labels and other materials (US \$30,000); organize workshops with national authorities, importers and distributors (US \$10,000); and cover the costs of local travel (US \$10,000); and
- (e) *Updating the national capacity for testing energy consumption* (US \$45,000): Assess the availability of local testing laboratories, identify gaps and assist in the definition of requirements to get certification as testing laboratories (US \$15,000); conduct training on test methods and software (US \$20,000); and support the accreditation of at least two laboratories for confirming the external certification (US \$10,000).

Total cost of the pilot project

13. The project is expected to be completed within 36 months of approval, i.e., between January 2026 and December 2028, at a total cost of US \$311,000, plus agency support costs, as initially submitted.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

14. The Secretariat has reviewed the proposal in light of the activities described under decisions 89/6, 91/65, and 95/87 as well as those being implemented under stage I of the KIP. The Secretariat reviewed the proposed activities under decision 91/65 in light of the approved activities under decision 89/6 (see paragraphs 2 and 3 above) and found that the activities were complimentary and not duplicative. Activities approved under decision 89/6 are more geared towards improving energy-efficiency policies to promote equipment and products based on low-GWP refrigerants, whereas activities proposed under decision 91/65 are geared toward accelerating the operationalization of mandatory MEPS and labelling for residential AC equipment.

Eligibility under decisions 91/65, 95/87 and 89/6

15. This proposal meets the eligibility criteria under decision 95/87(d), since it was submitted as a servicing sector project prior to the 100th meeting. The proposed activities are also in line with eligibility criteria listed in decision 91/65(b)(i)d., since it is a project in the servicing sector and was not previously funded; 91/65(b)(iii), since the activity will help incentivize opportunities to avoid the continued growth of R-410A use for residential AC; 91/65(b)(vi) since the activity supports the development of MEPS. The Government of Paraguay commits to the conditions referred to in decision 91/65(b)(iv)b. to b(iv)e.

16. The proposed activities are furthermore in line with the eligibility criteria listed in decision 89/6(b)(iii), since they include coordination and collaboration between the NOU and relevant authorities and bodies to include an appropriate consideration of MEPS and, as appropriate, labelling and testing programmes, and standards for refrigeration, air-conditioning and heat pumps equipment; and in decision 89/6(b)(v), since they include an awareness campaign to promote the introduction of MEPS and labelling systems.

17. In line with decision 91/65(b)(iv), the Government of Paraguay has also confirmed that the NOU would coordinate with relevant energy-efficiency authorities and national standards bodies to facilitate consideration of refrigerant transition when developing energy-efficiency standards in the relevant sectors/applications; that, if Paraguay were to mobilize funding from sources other than the Multilateral Fund for energy-efficiency components when phasing down HFCs, the project would not result in the duplication of activities among those funded by the Multilateral Fund and those funded from other sources; that the information on project progress, results and key learning would be made available, as appropriate; that the date of completion of the project would be set at no more than 36 months after the date of approval by the Executive Committee; and that a detailed project report would be submitted to the Executive Committee within six months of the date of completion of the project.

18. UNDP confirmed that the implementation of this energy-efficiency project would be conducted by MADES to ensure that the project's initiatives, proposals and activities have institutional support and sustainability over time. Early consultations were held with key ministries to ensure their commitment to the preparation and implementation of the project. The VMME is leading the CNEE, and other stakeholders involved in the project include the INTN for standardization and certification, the MIC for commercial regulation, the National Electricity Administration for the analysis of impact on electricity demand, the Paraguayan Petroleum Company, and binational entities (ITAIPU, YACYRETA) for financing and dissemination. Alongside energy stakeholders, a consultative body made up of representatives of various RAC subsectors and recognized by a ministerial resolution, the Committee of Good Practices in Refrigeration and Air Conditioning, will also be part of this working group.

Relationship to HFC phase-down and the Kigali HFC implementation plan

19. The pilot project will be implemented in coordination with activities under stage I of the KIP. Activities in the approved KIP related to energy efficiency include developing and implementing a training programme for 50 decision makers and key stakeholders to promote the use of low-GWP technologies at health facilities and energy-efficiency improvements; and an end-user technology demonstration project in the commercial refrigeration sector. The increasing consumption of HFCs in Paraguay is primarily driven by the existing stock of AC equipment, which predominantly utilizes R-410A. KIP activities also include drafting regulations on a gradual import ban on R-410A-based AC units and training RAC technicians on the safe use of R-600a and R-290 in RAC systems. Operationalizing MEPS in the residential AC sector will help reduce the installed base of equipment containing R-410A and promote the adoption of low-GWP alternatives.

Technical and cost-related issues

20. Paraguay has an operational quality infrastructure for energy efficiency, including quality coordination, the accreditation body, the standardization body, certification bodies, and energy-efficiency

testing laboratories. However, it does not currently have laboratories for testing the energy efficiency of air conditioners or low-capacity domestic and commercial refrigeration equipment. If the country implements a labelling system now, it will have to take advantage of international trade, simplified dispatch and the transportation of samples to other countries to be tested, in particular Argentina and Brazil. The current technical standard for energy-efficiency testing in Paraguay is based on a version of the international standard ISO 5151 that is not in force.

21. The Secretariat enquired about the proposed activity for testing laboratories and UNDP clarified that only an evaluation of the current capacity of available laboratories within the country or, if necessary, external laboratories, would be conducted. Technical support will be provided to build evaluation capacities, requiring not only training but also access to appropriate software to analyse energy consumption based on seasonal energy efficiency ratio (SEER), which is the most suitable for evaluating AC consumption. As part of this component, support will be provided for the accreditation, if applicable, of at least two already installed test laboratories; therefore, no laboratory equipment acquisition is required.

22. Following discussions on activities, expected outcomes, and associated costs, the overall project budget was further optimized and agreed with UNDP, as shown in table 2. The level of funding agreed upon will help ensure that the process of operationalizing the mandatory MEPS and labelling for residential AC units is accelerated and will be significantly strengthened with the incorporation of testing laboratories at national level, aimed at labelling the energy efficiency of air conditioners.

Table 2. Agreed activities and costs of the energy-efficiency pilot project in Paraguay

Activity	Sub-activity description	Budget (US \$)
Institutional activities	Gather information on residential AC energy-efficiency labelling systems and MEPS in other countries and hold consultations with stakeholders, importers and consumers	5,000
	Conduct technical assistance workshops, training and meetings to discuss regulatory developments and coordinate with relevant authorities and national standards bodies regarding residential AC equipment	5,000
Technical and market analysis studies	Develop a comparative evaluation of energy-efficiency levels and trends found in national, regional, and international markets and prepare a report on the estimated impact of the entry into force of energy labelling, classification regulations, and the MEPS	7,500
	Survey and analyze imported equipment, including its energy consumption, and develop a comparative study and report	40,000
	Develop a database with baseline and results of energy consumption measurements and calculations of energy-efficiency indexes for 16 types and three different capacities of equipment available on the market, including three split-type, three window, and two portable AC models using on/off and inverter type technology, for the energy classification proposal and the development of MEPS for residential air conditioners	36,000
Roadmap/Strategic plan for energy-efficiency labelling and MEPS	Conduct an analysis and prepare a report on regulatory gaps for the implementation of energy-efficiency labelling and the establishment of MEPS for residential AC units	7,500
	Develop MEPS and related labelling for residential air conditioners	7,500
	Organize workshops to promote and create awareness and to negotiate the implementation of MEPS with importers and distributors of residential AC	25,000
	Develop awareness-raising materials	5,000
	Local travel	5,000
Design, establishment and dissemination of updated MEPS and labels	Conduct data analysis and configure MEPS for residential AC equipment	7,500
	Design labels and other materials	20,000
	Organize workshops with national authorities, importers and distributors	5,000
	Local travel	5,000
Updating the national capacity on energy	Assess the availability of local testing laboratories, identify gaps and assist in the definition of requirements to get certified as testing laboratories	10,000

Activity	Sub-activity description	Budget (US \$)
consumption test methods	Conduct training on test methods and software	10,000
	Support the accreditation of at least two laboratories to confirm external certifications	8,000
GRAND TOTAL		211,500

Monitoring

23. The recommended funding covers collection of detailed information on energy consumption measurements and calculation of energy-efficiency indexes for 16 types of residential AC equipment. The project will conduct a national technical and market information survey of residential AC units, analyzing *inter alia* imported equipment types, capacity, energy consumption, SEER (where applicable), refrigerant type and charge, and sharing information on energy consumption, performance comparisons, and savings comparisons to ensure proper reporting to the Executive Committee on project results.

Agreed cost of the pilot project

24. The agreed cost of implementing the pilot project to promote coordination between the NOU and energy-efficiency authorities to support the improvement of energy-efficiency labelling schemes and the introduction of MEPS for residential air conditioners in Paraguay amounts to US \$211,500, plus agency support costs of US \$19,035 for UNDP, and activities were agreed as revised in table 2 above.

Sustainability and assessment of risks

25. Long-term sustainability of Paraguay's MEPS development project and the labelling initiative for residential AC equipment is anchored in global momentum toward enhancing energy-efficiency standards across all RAC technologies, and particularly for air conditioners. Paraguay's abundant hydroelectric resources and biomass availability result in relatively low energy costs, which can act as a disincentive for adopting energy-efficiency measures. If this dynamic remains unchanged, the country risks becoming a destination for outdated and inefficient equipment. This would not only increase environmental liabilities—such as electronic waste, plastics, oils, and high-GWP refrigerants—but also undermine national efforts to comply with the Kigali Amendment. A particularly critical challenge lies in the resistance of certain importers and distributors, who financially benefit from the continued sales of low-efficiency or short-lifecycle equipment. Despite declining global inventories of such technologies, their profitability in local markets remains high, posing a barrier to transition. The implementation of MEPS and mandatory product labelling offers a strategic response to these risks. In the short and medium term, these measures can curb the influx of obsolete equipment and promote informed consumer choices. Over the longer term, they will facilitate market shift toward cleaner, more sustainable technologies, contributing to environmental protection and international compliance.

26. The project will generate technical knowledge and experience for developing MEPS for related sectors, such as domestic and commercial refrigeration. There is in-kind co-financing from the country's energy-efficiency authorities in support of project implementation, and MADES will make its communication channels and offices available to the project to amplify its messages.

RECOMMENDATION

27. The Executive Committee may wish to consider approving the pilot project to maintain and/or enhance the energy efficiency of replacement technologies and equipment in the context of HFC phase-down (non-investment activities) in Paraguay, in the amount of US \$211,500, plus agency support costs of US \$19,035 for UNDP, noting:

- (a) That the Government of Paraguay has committed to the conditions referred to in decision 91/65(b)(iv)b. to b(iv)d., and

- (b) That the project will be operationally completed no later than 31 December 2028 and a detailed report will be submitted to the Executive Committee within six months of the date of completion of the project.
