Validated Terminal Review of the UNEP/GEF Project

"Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica"

(GEF ID 9283)

2019 – 2025

UNEP Climate Change Division

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Accelerating the transition to electric public transport in the Greater Metropolitan Area of Costa Rica Project

(GEF Project ID 9283 – UNEP SMA ID 39016)

(12/2025)

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The reviewer would like to express their gratitude to all persons met and who contributed to this review, as listed in Annex III.

The reviewer would like to thank the project team and in particular Mr/Ms. Randall Zuñiga and Carolina Flores from MINAE, Gloriana Jimenez and Geilyn Aguilar from CABEI as the PMs, and Roberto Borjabad from U4E, for their contribution and collaboration throughout the review process. Sincere appreciation is also expressed to the Asher Lessels and Loana Vega from UNEP who took time to provide comments to the draft report. The reviewer(s) would also like to thank ICE, CNFL, CIRE, BETTERGY, BEIRUTE for their contribution and willingness during the review. Finally, special gratitude to the beneficiaries PIMA and Hospital Blanco Cervantes for their openness to explore demonstrative projects from every angle.

The review consultant(s) hopes that the findings, conclusions and recommendations will contribute to the successful finalisation of the current project, formulation of a next phase and to the continuous improvement of similar projects in other countries and regions.

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ABOUT THE REVIEW

Joint Review: No

Report Language(s): English

Review Type: Terminal Review

Brief Description: This report is a Terminal Review of the UNEP project "*Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica*" implemented between 2019 and 2025. The project's overall goal was to "*Accelerating improvements in energy efficiency under Costa Rica's public procurement programs and reducing Costa Rica's energy consumption and carbon dioxide emissions*". The review sought to assess project performance in terms of relevance, effectiveness and efficiency, and determine the sustainability of its results. The review has two primary purposes: accountability and learning. Data collection methods included: field observations, in-depth interviews, Focus Group Discussions and document reviews. Data analysis was based on applying triangulated data to assess performance against a reconstructed Theory of Change and its causal pathways.

With an overall performance rating of *Satisfactory*, the 5th point on a six-point scale, the main findings include: (i) strong relevance and alignment with UNEP, GEF and national priorities, with the project effectively strengthening enabling conditions for energy efficiency in Costa Rica's public sector, particularly through public procurement reforms, standards, and demonstration projects; (ii) solid effectiveness in delivering core technical outputs, supported by the active and strategic roles of UNEP, MINAE and U4E, which helped compensate for execution challenges; (iii) moderate efficiency and scalability, constrained by regulatory barriers that prevented the establishment of the revolving fund, redistribution of non-financial implementation tasks among other stakeholders with enhanced flexibility in procuring goods for third-parties , and disruptions caused by COVID-19 and turnover within the Executing Agency; and (iv) knowledge management and communication products were delivered but not fully institutionalized, while gender considerations were addressed in implementation but not systematically integrated at design.

The main recommendations to UNEP are: (i) to support the institutionalization of the energy-efficiency tracking tool within PGAI reporting frameworks, (ii) strengthen energy-management capacities across public institutions, and (iii) to promote the development of legally viable financing mechanisms aligned with public-sector regulations. Implementing parties are advised to reinforce follow-up with demonstration project beneficiaries, improve coordination with central financial authorities, and embed gender and knowledge-management considerations more explicitly in future project design to enhance sustainability and scale-up.

Source(s) of Funding by Country: *Costa Rica*

Source(s) of Funding by Institution Type[1]: *(indicate all that apply)*

Foundation/NGO	Yes
Private Sector[2]	No
UN Body	Yes
Multilateral Fund	No
Environment Fund	Yes

Key words: Climate Change; Demonstration Projects; Efficient Appliances Catalogues; Energy Efficiency; Energy Audits and diagnosis; Financial Mechanisms; Minimum Energy Performance Standards; Sustainable Market Development; Testing laboratories and norms.

Primary data collection period: September 1st, 2025 until October 15th, 2025

Field mission dates: October 20th, 2025 until October 29th, 2025

[1] Based on the co-financing effectively mobilized

[2] COOPELESCA and COOPEGUANACASTE, although are private companies, are considered as NGO

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LIST OF ACRONYMS

ARESEP	National Authority for Public Service Regulation
CABEI	Central America Bank for Economic Integration
CC	Climate Change
CCM	Climate Change Mitigation Results Framework (GEF)
CENCE	Costa Rican National Energy Control Center from ICE
CHEM	Chemical Mitigation Results Framework (GEF)
CNFL	National Company of Force and Light
CONACE	National Commission for Energy Conservation
D-011	Executive Mandate 011-MINAE
DCC	Climate Change Directorate from MINAE
DE	Energy Directorate from MINAE
DIGECA	Environmental Quality Management Directorate from MINAE
DSE	Energy Sector Directorate from MINAE
ECA	Costa Rican Accreditation Body
EE	Energy Efficiency
EOU	Evaluation Office of UNEP
EPR	Extended Producer Responsibility
ESCO	Energy Service Company
ESPH	Public Service Company of Heredia
GEF	Global Environment Facility
GEFTC	Global Environment Facility Trust Fund
GELC	Global Efficient Lighting Centre
GHG	Greenhouse gas
GW	Gigawatt
GWh	Gigawatt-hour
IA	Implementing Agency
ICE	Costa Rican Institute of Electricity
IMN	National Meteorology Institute
INTECO	Institute of Technical Standards of Costa Rica
IW	Inception Workshop
JASEC	Administrative Board of Electrical Services of Cartago
kWh	kilowatt-hour
LED	Light Emitting Diode
LEE	Energy Efficiency Laboratory from ICE
M&E	Monitoring and Evaluation
MEPS	Minimum Energy Performance Standards
MINAE	Ministry of Energy and Environment
MP	Mesoamerican Project
MRV	Monitoring, Reporting and Verification
MSME	Micro, Small and Medium Enterprises
MTS	UNEP Medium-Term Strategy
MW	Megawatt
NAMA	Nationally Appropriate Mitigation Action
NC	National Communications

NDC	Nationally Determined Contribution
NLTC	National Lighting Test Center
NPD	National Project Director
OFP	GEF Operational Focal Point
PGAI	Institutional Environmental Management Programs
PM	Project Manager
PMC	Project Management Cost
PMU	Project Implementation Unit
PND	National Development Plan 2015-2018
PNE	Costa Rican National Energy Plan
PPG	Project Preparation Grant
PSC	Project Steering Committee
PTR	Project Terminal Report
PWT	Project Work Team
RLF	Revolving loan fund
SICOP	Integrated Purchase System for Public Institutions
SMART	Specific, Measurable , Assignable, Realistic and Time-related
SPPEL	Sustainable Public Procurement and Ecolabelling
tCO2eq	ton of Carbon Dioxide (equivalent)
TICR	Technical Institute of Costa Rica (Bettergy partner for the project)
TJ	Terajoule
TM	UNEP Task Manager
U4E	United for Efficiency
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollar
VII PNE	Seventh National Energy Plan of Costa Rica 2015-2018
WEEE	Waste Electrical and Electronic Equipment
Yr	year

PROJECT IDENTIFICATION TABLE

Table 1: Project Identification Table

GEF Project ID/SMA ID[3]:	9283 / 39016		
Type of GEF Project:	Child: Y	Global Coordinating Project:	N
	If yes, provide GEF Programme[4] ID: 9083	Medium-Size Project or Full-Size Project:	MSP
UNEP Management (Division/Branch/Unit):	Climate Change Division	Executing Agency: (indicate if internally executed):	Central American Bank of Economic Integration (CABEI)
Sources of Funding (Co-finance):	Country[5](ies): Costa Rica	Institution[6] Name/Type: MINAE, ICE, CNFL, ESPH, COOPEGUANACASTE, UNEP, COOPELESCA	
Relevant SDG(s):	SDG goal 13: Take urgent action to combat climate change and its impacts		
MTS (at approval):	2018-2021		
POW Output(s) number/reference[6](applicable for projects approved pre-2022)	POW Output: (ii) Increase in climate finance invested by countries or institutions for clean energy, energy efficiency and/or amount of decarbonized assets	POW Expected Accomplishment(s) number/reference[6] (applicable for projects approved pre-2022):	POW Expected Accomplishment: (b) Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
Sub-programme:	Climate Change	Programme Coordination Project (if relevant):	
UNEP approval date:	22/10/2018	GEF approval date:	04/10/2017
GEF Operational Programme/Cycle # (e.g. GEF-7):	GEF-6	GEF Strategic Priority (e.g. BD4):	
Focal Area(s):	Climate change Mitigation		
Expected start date[7]:	N/A	Actual start date:[8]	14/08/2019
Planned completion date[17]:	02/11/2021	Actual operational completion date:	31/01/2025
Planned project budget at approval:	GEF grant allocation: **2,000,000**		
	Expected co-financing (In-kind):**4,972,452**		
	Total planned budget**:** **6,972,452**		
Actual expenditures reported (cash only):	GEF grant expenditures reported as of March 31st 2025: **1,900,134** CABEI 577,051 U4E 1,317,311 CMU 5,771		
	Actual co-financing January 31st 2025: **4,619,269**		
	Total actual expenditures reported as of March 31st 2025: **6,505,876**		
No. of formal project revisions:	5	Date of last approved project revision:	27/01/2025
No. of Steering Committee meetings:	6	Date of Last Steering Committee meeting:	11/11/2024
Mid-term Review/ Evaluation[9]*(required or not required)*:	UNEP requirement: N GEF requirement: N	Mid-term Review/ Evaluation actual date:	N/A
Terminal Evaluation *(planned date)*:	31/07/2025	Terminal Evaluation actual date:	26/12/2025
Coverage - Country(ies):	Costa Rica	Coverage - Region(s):	Latin America & the Caribbean
Dates of previous project phases:		Status of future project phases:	

[3] SMA refers to the ID provided by the Integrated Planning, Management and Reporting Solution (IPMR) system, which was introduced by UNEP in July 2023. Previously, it was referred to as a PIMS ID number.
[4] GEF Programme refers to 'Parent' project.
[5] Where applicable, list countries who have provided project funds and/or co-finance.
[6] Indicate where funding institutions are any/all of the following: Foundation/NGO; Private Sector; UN Body; Multilateral Fund; Environment Fund.
[7] Expected/planned dates are listed in the Project Document (ProDoc).
[8] Actual start date is the date of the last signature on the PCA or ICA.
[9] UNEP projects of four or more years duration require an MTR unless there is an exceptional circumstance. See the *Evaluation in the Project Cycle* section in the Evaluation Office's operational manual. Donor requirements may vary and should be considered in conjunction with UNEP's requirements.

EXECUTIVE SUMMARY

Project background

1. The UNEP-GEF project "Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica" (GEF ID 9283) was implemented in Costa Rica between August 2019 and January 2025. The project was funded by a GEF grant of USD 2,000,000 complemented by USD 4,972,452 in planned co-financing from national public institutions and partners, resulting in a total planned budget of USD 6,972,452 million. The project was implemented by UNEP's Climate Change Division, executed by the Central American Bank for Economic Integration (CABEI), with technical execution support from United for Efficiency (U4E), and national leadership from the Ministry of Environment and Energy (MINAE).
2. The project rationale was grounded in the need to reduce greenhouse gas (GHG) emissions from electricity consumption in Costa Rica's public sector by accelerating the adoption of energy-efficient appliances—specifically lighting, air conditioning and refrigeration—while strengthening public procurement systems, institutional capacities, and environmentally sound end-of-life management of replaced equipment. The project objective was to accelerate improvements in energy efficiency under Costa Rica's public procurement programmes, contributing to reduced energy consumption and associated GHG emissions, while supporting national climate and energy policy priorities.
3. The project design was based on an analysis of key barriers hindering the uptake of energy-efficient appliances in the public sector, including limited institutional capacity for energy management, insufficient technical information to support procurement decisions, weak enforcement of minimum energy performance standards, lack of access to suitable financing mechanisms, and gaps in environmentally sound end-of-life management of replaced equipment. To address these barriers, the project was structured around four components: (i) identification of high-energy-consuming public institutions and delivery of energy diagnostics; (ii) strengthening of public procurement systems through standards, catalogues and service-provider databases; (iii) establishment of financial mechanisms to support large-scale replacement of inefficient equipment—later reformulated toward demonstration projects due to regulatory constraints; and (iv) development of an enabling framework for environmentally sound management of end-of-life appliances.
4. During the Terminal Review, the Theory of Change was reconstructed to reflect implementation realities, incorporating revised causal pathways, updated drivers and assumptions, and explicitly acknowledging regulatory and institutional constraints that affected scalability, while confirming the project's contribution to enabling conditions for long-term energy-efficiency improvements in the public sector.

This review

5. This Terminal Review assessed the project's performance in terms of relevance, effectiveness and efficiency, and examined the sustainability of its results at operational completion. The review applied UNEP's standard nine evaluation criteria and assigned ratings using a six-point scale. The primary purposes of the review were accountability and learning, providing evidence of results while identifying lessons and recommendations to inform future interventions.
6. Data collection methods included a comprehensive desk review of project documentation, in-depth interviews with key stakeholders, focus group discussions, and field visits to selected demonstration project sites. Data analysis was based on triangulation of qualitative and quantitative evidence and assessed performance against a reconstructed Theory of Change, allowing examination of causal pathways, assumptions, and drivers influencing outcomes and longer-term impact.

7. In addition, key findings from the review are to be uploaded to the GEF Portal. To support this process, the review systematically compiled and synthesized findings related to GEF priority topics, ensuring consistency with GEF reporting requirements.

Key findings and performance ratings

8. The project demonstrated strong strategic relevance, showing full alignment with UNEP's Medium-Term Strategy and Programme of Work, GEF-6 Climate Change Mitigation priorities, and Costa Rica's national energy, climate and sustainable procurement policies. The project also showed high complementarity with UNEP-led global initiatives, particularly as a child project of the United for Efficiency (U4E) Programme, ensuring coherence and avoiding duplication.

9. Stakeholder engagement and institutional leadership were key enabling factors for project delivery. UNEP played an active supervisory and strategic role throughout implementation, particularly in guiding adaptive management and the redesign of Component 3. CABEI retained responsibility primarily for the execution of several consultancy and service-related components, and contributed its regional experience in structuring financial mechanisms through financial analysis deliverables and engagement with the banking sector during training activities. MINAE, through the Directorate of Energy and DIGECA, provided strong national leadership and ownership, while U4E made a decisive technical contribution by assuming additional responsibilities after Component 3 re-design, and ensuring high-quality execution of procurement and demonstration activities. The aforementioned stakeholders helped mitigate the impacts of the project redesign by addressing and overcoming specific administrative constraints in procurement processes within the Executing Agency and disruptions caused by the COVID-19 pandemic, allowing the project to achieve its core results.

10. The project has demonstrated strong performance in the areas of: (i) successful update of energy-efficient appliances catalog within Costa Rica's public procurement platform (SICOP), ensuring that only compliant energy-efficient appliances are available for public purchase; (ii) the delivery of 20 high-quality energy audits in major public institutions, providing a robust evidence base for energy-efficiency investments; (iii) the implementation of demonstration projects in lighting, air conditioning and refrigeration that validated the technical and economic feasibility of efficiency measures; (iv) significant capacity-building efforts, with more than 250 public officials, suppliers and service providers trained on procurement, energy audits, standards and environmental management.

11. Areas that would have benefited from further attention include: (i) the thorough feasibility assessment and pre-design of the financial mechanism, as regulatory barriers prevented the establishment of the intended Revolving Loan Fund, limiting scalability; (ii) execution capacity constraints within the Executing Agency for procurement processes, frequent turnover of Project Managers at CABEI and project specialists from UNEP; (iii) partial uptake of certain tools, such as the energy-efficiency tracking instrument, and a relatively modest approach to communication, public awareness and gender-responsive programming.

Table 2: Summary of project ratings

Criterion	Rating
Strategic Relevance	HS
Quality of Project Design	S
Nature of External Context	MF
Effectiveness	S
Financial Management	S
Efficiency	MS
Monitoring and Reporting	S
Sustainability	ML
Factors Affecting Performance	MS
Overall Project Performance Rating	**S**

Conclusions summary

12. Overall, the project performed at a Satisfactory level. Its main achievements include the institutionalization of minimum energy performance standards within public procurement, the strengthening of national testing and standards infrastructure, the delivery of high-quality diagnostics and demonstration projects, and the establishment of durable institutional arrangements that support continued procurement of energy-efficient appliances in the public sector. Nevertheless, a major redesign of Component 3 was required during implementation, as the establishment of the revolving fund proved not to be feasible.

13. The strongest performing aspects were the technical components related to procurement reform, standards development, energy audits and demonstration projects, underpinned by effective collaboration between MINAE, UNEP and U4E. Comparative weaknesses were apparent in the financial component, where regulatory constraints prevented the operationalization of a revolving fund, and in project execution efficiency, due largely to limitations in the Executing Agency's technical capacity and management continuity.

Lessons learned

14. **Lesson 1: Regulatory feasibility must be validated before designing public-sector financial mechanisms**. The project demonstrated that public-sector financial mechanisms must be grounded at the design stage, comprising a thorough legal and regulatory analysis. The failure to establish the Revolving Loan Fund highlighted how approval processes and institutional mandates can constrain implementation. Early engagement with all relevant authorities is essential to avoid redesigns that limit scalability and impact.

15. **Lesson 2: Executing Agency Selection shall Prioritize not only Management capacity but also Technical knowledge and procurement flexibility**. CABEI has extensive experience in regional project management, including initiatives in the energy sector. Its selection was also driven by its expertise in financial structuring, which constituted one of the project's key components. Once this component proved unfeasible, constraints related to the procurement of equipment for third parties became evident during the project's reformulation. The selection of the Executing Agency should therefore take into account potential contextual changes that may require adaptation through agile and flexible procedures. CABEI's contributions could alternatively be focused on the design and execution of financial components..

16. **Lesson 3: Embedding Dedicated Funds in Project Design Creates Timing and Efficiency Risks.** The project underestimated the time and complexity required to establish a dedicated public-sector financing mechanism. Creating new funds involves legal, governance, and administrative processes that rarely align with project timelines. Leveraging existing financial structures may provide more efficient and scalable alternatives.

17. **Lesson 4: Motivated Institutions and Coordinated Technical Work Are Catalysts for Scalable Results.** Strong coordination among motivated institutions and technical teams enabled key results despite implementation challenges. Clear technical leadership and sustained inter-institutional collaboration were critical to delivering standards, procurement reforms, audits, and demonstration projects with lasting value.
18. **Lesson 5: Early Gender Analysis Strengthens Design and Sector Engagement**. The absence of a gender analysis at design limited the project's ability to systematically address gender equality. Although women's participation was promoted during implementation, earlier integration of gender considerations could have strengthened engagement and outcomes in a male-dominated sector.

Recommendations

19. **Recommendation 1: Operationalize and Integrate the Energy-efficiency Tracking Tool**. The project developed a tracking tool to support monitoring of energy-efficient procurement and compliance within public institutions; however, its use remained limited and largely voluntary. Without formal institutional integration, the tool did not reach its full potential as a decision-making and accountability mechanism
20. **Recommendation 2: Strengthen PGAI Adoption and Institutional Energy Management**. Most public institutions lack structured energy management practices, sectoral PGAIs emphasize environmental aspects over energy, and focal points are not consistently designated—limiting sustainability and scalability of efficiency actions. MINAE should insist on annual reporting of energy indicators, use of the tracking tool, and training requirements.
21. **Recommendation 3: Establish a Follow-up Programme with Demonstration Project Beneficiaries**. Demonstration projects successfully validated the technical and economic feasibility of energy-efficiency measures in real operational settings. However, no structured follow-up mechanism was established to monitor performance, support replication, or capture lessons learned beyond project closure. A dedicated follow-up programme would help consolidate results, promote scaling-up, and inform future investments in similar public institutions.
22. **Recommendation 4: Design Incentives to Mobilize ESCOs for Public Sector Energy Efficiency with proper financial mechanism for investments**. The public sector continues to face limited technical support for project preparation and low participation from ESCOs. The inability to establish the Revolving Loan Fund highlighted the need for alternative, legally viable financing and incentive structures. A financial support programme from MINAE for energy audits and pre-investment studies —aligned with national regulations and potentially leveraging existing public-sector capacities—would help mobilize ESCOs and strengthen project pipelines. In addition, a mechanism is proposed to channel investments and repayments through strategic actors such as ICE, to enable scalable energy-efficiency investments.

Validation

The report has been subject to an independent validation exercise performed by UNEP's Evaluation Office. The performance ratings for the 'Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica' project, set out in the Conclusions and Recommendations section, have been adjusted as a result. The overall project performance is validated at the **Moderately Satisfactory** level. Moreover, the Evaluation Office has found the overall quality of the report to be Satisfactory (see Annex XII).

I. THE PROJECT

A. Context

Intervention context

23. The project addresses the issue of reducing greenhouse gas emissions through the adoption of energy-efficiency measures in the public sector, aimed at reducing energy-use intensity. This includes the development of minimum standards for the procurement of lighting, refrigeration, and air-conditioning equipment, alongside the implementation of energy audits and demonstration projects that can serve as models for scaling up.

24. The residential sector consumes the largest share of electricity in Costa Rica, followed by the industrial sector and service sector. Relevant to the current project, the public sector consumes 12.7% of the electricity production in Costa Rica and employs 15.2% of the labor force. The current project focuses on the Costa Rican public sector and aims to empower the highest electricity consuming public institutions to comply with energy efficiency legislation to lead and mandate by preaching with example.

25. A survey contracted by the Energy Sector Directorate (DSE) of the MINAE analyzed the share energy use on the Public Sector, identifying that almost half the electricity consumption in the public sector in 2015 comes from building lighting, air conditioning and refrigeration appliances. Hence, the current project focuses on these three specific appliances deployment in the public sector.

26. Despite the importance of energy efficiency, certain barriers and gaps hinder its deployment in Costa Rica. The current energy efficiency policy framework dates from more than 20 years ago (i.e. Legislative Act 7447, 1994). The Seventh National Energy Plan of Costa Rica 2015-2018 (VII PNE) recognizes that the current energy efficiency policy framework has not been effective enough. Moreover, replacement of conventional and obsolete appliances by efficient appliances is many times stalled due to a higher capital cost as well as lack of awareness from incumbents.

27. Despite incentives are provided to reduce the capital cost of certain efficient appliances (Legislative Act 8820, 2010), this has not provided enough motivation to replace conventional appliances. Because of limited resources to ensure enforcement by the Costa Rican Ministry of Energy and Environment (MINAE), implementation gaps (e.g. loopholes in regulations allowing supply of inefficient appliances, lack of technical capacities from procurement and environmental officers, etc.) as well as the lack for appropriate monitoring mechanisms to track progress and assess benefits (MINAE, 2015).

28. Recently enacted mandatory energy efficiency regulations have been targeted to the public sector – hence becoming the only sector with compulsory energy efficiency guidelines in the country. Nevertheless, there are still implementation gaps that hinder compliance from public institutions to these mandates. For example, there is a lack of enabling mechanisms (i.e. framework agreements) to ensure procurement of efficient appliances and a duly end-of-life integrated management of replaced conventional appliances in accordance to (Executive Act 0110-MINAE, 2014).

29. Complementary, capacities from relevant actors need to be developed and strengthened. Procurement officers from public institutions need to know the proper set of decision-making tools to duly acquire efficient appliances and require an environmentally sound end-of-life management of replaced conventional appliances. Technology providers (i.e. importers, retailers and local manufacturers) also need to know about procedures of conformity assessment, certification and labeling for products verification and compliance with minimum energy efficiency performance standards (MEPS), just to mention some examples. Technical capacities related to end-of-life management of replaced appliances also need to be strengthened, especially in terms of proper disposal

of hazardous and polluting chemicals present in replaced obsolete lighting products and appliances (i.e. mercury in fluorescent lighting or refrigerant gas). For example, to date, disposed refrigerant gas from refrigerators and air conditioning units are stored because there are no current alternatives for its destruction or recycling. Therefore, there is a need to improve the current practices to avoid fugitive emissions. Similarly, mercury from disposed fluorescent lights (if recovered) is stored, because no current disposal technique is available locally.

30. To sum up, the main root problems on which the project formulation is based are established in the "Problem Tree" and are listed below: (i) Energy diagnosis are not conducted in public institutions, limiting the possibility to identify energy savings opportunities; (ii) Inefficient appliances are still available in public procurement databases and market actors lack awareness on the benefits of efficient appliances; (iii) Large-scale energy efficiency initiatives in the public sector are intermittent and scarce due to lack of sufficient and sustained investments; and (iv) End-of-life management of hazardous waste derived from disposed appliances is not always performed in an environmental sound way

Institutional context

31. The “Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica” (GEF ID 9283) was a Medium-Sized Project (MSP) who run from August 2019 to January 2025. The project was implemented by the UNEP Climate Change Division in partnership with MINAE, executed by CABEI and U4E. Other key stakeholders involved were ICE Group, CNFL and CIRE.

32. The project benefited from other initiatives, hosted under the program “Leapfrogging markets to high efficiency products -appliances, including lighting, and electrical equipment-” lead by UNEP. The Program builds on the UNEP-GEF global project “Establishing the Foundations of a Partnership to Accelerate the Global Market Transformation for Efficient Appliances and Equipment”, called the “SE4ALL Global Project”.

33. The project was approved on October 4th, 2017 by GEF and further approved on October 22nd, 2018 by UNEP. The project started on August14th, 2019 and outlined a planned duration of 36 months. After starting delays, was intended to end on January 31st, 2024, but finally ended on January 31st, 2025. The Project financing was US$ 2,000,000, and the anticipated co-financing was US$ 4,972,452, hence a total planned budget of US$ 6,972,452, including cash, in-kind and public investment. Co-financing was executed in line with commitments from stakeholders.

34. The project had an intended impact of reducing GHG emissions from public sector electricity consumption, and contributes to the following Expected Accomplishment in UNEP’s Programme of Work 2018-2019: (b) Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies.

35. The project underwent five formal reviews, with major adjustments introduced in Project Revision No. 3 (December 2022), during which the Outcome, Outputs, and Activities under Component 3 were reformulated. Responsibilities were allocated between CABEI and U4E by mutual agreement, taking into account their respective expertise and agility in contracting and procurement processes., as implementation under the original arrangement had proven unfeasible. Overall, project activities were satisfactorily completed, supported by a 30-month no-cost extension that allowed the project to address and recover from various implementation delays. As this was an MSP designed with a planned duration of less than three years, no Mid-Term Review (MTR) was undertaken.

B. Results Framework

36. Primary source for the summary table is the Project Design Document (ProDoc) and further Project Revisions. In addition, during the TR Inception Phase, impact and intermediate states were reformulated and drivers and assumptions added to enhance the ToC. A few Outcomes and Outputs were also rephrased mainly to reconstruct a more robust causality pathway.

37. The Results Framework is well aligned with the overall project structure, with indicators and targets clearly linked to the project objective and Outcomes, and with Outputs and activities logically connected to each Outcome. The project components are coherently structured to support a clear purpose: Component 1 focuses on identifying and audit high-energy consumers; Component 2 is centered on ensuring that public procurement of electric appliances comply with required energy efficiency specifications; Component 3 addressed the creation of a financial revolving fund to ensure large-scale replacement (later changed to address demonstration projects to showcase technical and economical feasibility); and Component 4 is dedicated to environmentally sound end-of-life management of selected appliances.

Table 3: Summary of project's latest approved results framework

	Results Statement
Project objective	Accelerating improvements in energy efficiency under Costa Rica's public procurement programs and reducing Costa Rica's energy consumption and carbon dioxide emissions
Impact	Energy Consumption is reduced and Greenhouse Gas Emissions mitigated Other impacts: (i) Urban quality life and resilience is enhanced, (ii) Imported hydrocarbons Dependence is reduced, (iii) Risk of improper handling of hazardous waste is minimized
Intermediate state	Successful procurement of efficient appliances by the public sector (added during Inception Phase)
	Conventional and obsolete appliances are replaced on a large scale in the public sector, considering an environmentally sound end-of-life integrated management (added during Inception Phase)
Project outcome	Outcome 1: Strategic sites from public institutions with the highest energy consumption showcase opportunities to replace of conventional appliances with energy efficient appliances
	Outcome 2. Suppliers provide the public sector with electric appliances that comply with required energy efficiency specifications (lighting, air conditioners and refrigerators) and energy efficiency services (audits and implementation)
	Outcome 2.b. Key officials in public sector trained to propose or conduct energy audits, identify opportunities and benefits and procure efficient appliances (added during Inception Phase)
	Outcome 3. Regulation, financial tools and empirically based guidelines are in place for the financing of procurement of efficient appliances that ensures sustainability of large-scale replacement programs (reformulated during Project Revision #3)
	Authorized waste handlers offer their services for environmentally sound end-of-life integrated management of lighting, refrigeration and air conditioning appliances
Outputs	1.1. Energy diagnosis implemented in strategic sites from highest energy consuming public institutions 1.2. Tracking instruments developed for efficient appliance procurement by public institutions
	2.1. Database of companies that can provide energy efficiency services to the public sector 2.2. Enabling framework provided to update current catalog of energy efficient appliances available to the public sector through their purchase platforms 2.3 Training delivered to (A) procurement and environmental management officials from highest energy consuming public institutions; (B) efficient appliances and energy efficiency service providers; and (C) technical public officials

	Results Statement
	2.4 Online platform launched to centralize information resources relevant for procurement of efficient appliances and energy efficiency services
	3.1B Regulations which overcome barriers to procurement of public building energy efficiency appliances and services, for adoption by MINAE, Treasury and other key actors. (reformulated during Project Revision #3) 3.2B Development of operational manual for such procurement, based on evidence from demonstrations in public buildings (reformulated during Project Revision #3) 3.3B Financial institutions, including Banco Nacional de Costa Rica and Banco de Costa Rica, and private sector service providers have access to financial tools and feasibility studies and enhanced capacity for financing energy efficiency appliances and services in public buildings (reformulated during Project Revision #3) 3.4 Demonstration projects implemented to showcase energy efficiency in the public sector (added during Inception Phase)
	4.1 Diagnosis about current processing capacity to provide environmentally-sound end-of-life integrated management of disposed appliances 4.2 New equipment operating to recover disposed refrigerant gas and mercury (contained in disposed conventional appliances) to be later destroyed 4.3 Methodology developed to establish recovery targets for replaced conventional lighting, air conditioning and refrigeration appliances in accordance to Executive Mandate 38272-S Articles 9 and 10 4.4 Enabling framework provided for environmentally sound end-of-life integrated management services (i.e. from lighting, air conditioning and refrigeration) available in purchase platforms used by the public sector 4.5 Training delivered to (D) waste compliance units, authorized waste handlers and suppliers; (E) procurement and environmental management officials from highest energy consuming public institutions; and (F) technical public officials 4.6 Information and dissemination actions carried out to promote environmentally sound end-of-life integrated management of special waste (from lighting, air conditioning and refrigeration appliances)

C. Project Implementation Structure and Partners

38. The Project was funded by the Global Environment Facility (GEF) with the United Nations Environment Programme (UNEP) acting as the GEF Implementing Agency. The Central American Bank for Economic Integration (CABEI) was acting as the Executing Agency, with the guidance of the Energy Directorate of the Ministry of Environment and Energy (MINAE). The U4E Centre of Excellence Technical provided execution support.

39. A Project Steering Committee (PSC) provided overall guidance and oversaw the progress and performance of the project as well as enhancement and optimization of the coordination and contribution with various project partners.

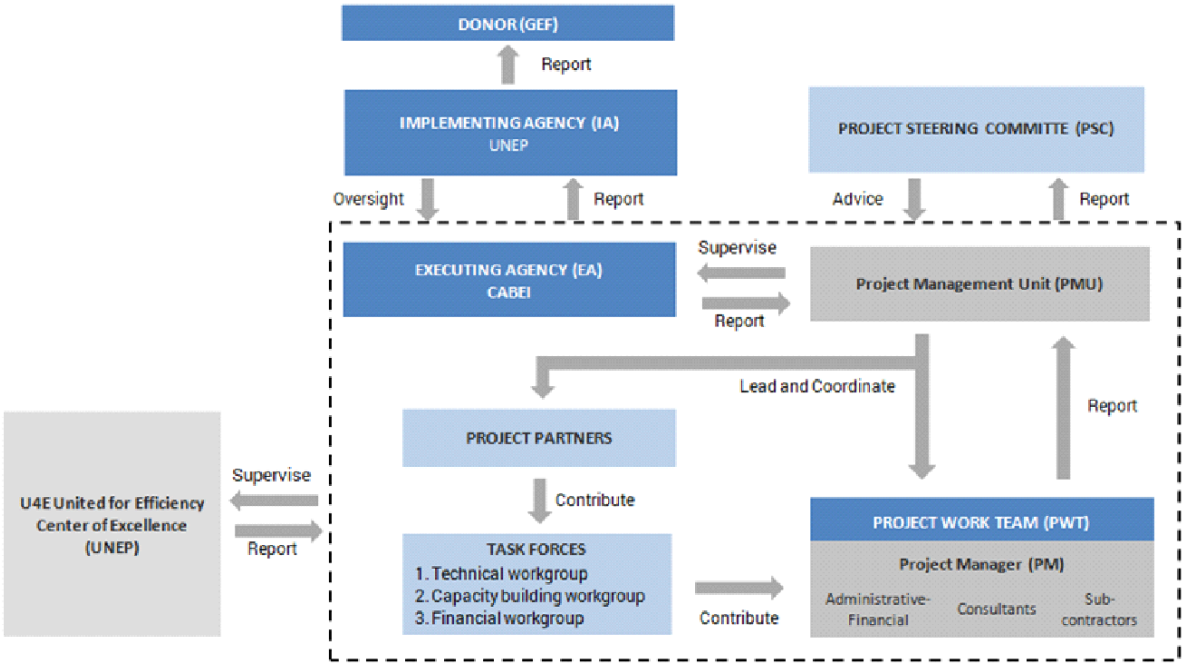
40. The Project Steering Committee (PSC) was composed of high level representatives of MINAE, Ministry of health, Treasury Ministry, BCIE, CONACE, UNEP, U4E. The PSC meetings will be formally called by the National Project Director (as Chairperson of the PSC) at least once a year to discuss the project performance and provide future guidance.

41. The Project Management Unit (PMU) was led by the National Project Director (NPD), represented by an officer from the EA, acting as a member of the PSC. The Project Manager (PM) took responsibility for the execution of the project in accordance with the project objectives, activities and budget, leading Day-to-day project operations and financial accounts.

42. Apart from the Steering Committee, Strategic Taskforces (Technical, Capacity Building and Financial) serve as a technical consultation group for the project. Taskforces support the development of project components and allow coordinating efforts with national and international partners through strategic workgroups.

43. Finally, United for Efficiency Centre of Excellence (U4E) provided strategic, technical and methodological support to the Executing Agency's PMU, and contributes to PWT and the PSC.

Figure 1: Organigram of the project with key project stakeholders



44. Several specific stakeholder roles stand out: (i) U4E assuming several execution duties since component 3 was reformulated, (ii) INTECO to prepare testing norms together with ICE Group as a key actor to provide testing capacities with LEE.

D. Stakeholders

45. The stakeholder landscape can be understood through a grouping based on roles, responsibilities, and relative influence. From an institutional standpoint, the core mandate in energy efficiency corresponds to MINAE, with Treasury playing a supporting role, as they are the competent official institution in charge of public procurement rules and public expenditures' efficiency. MINAE hold a political role, with delegated responsibilities for convening public sector institutions to meet energy goals, together with Treasury as delegated office for PGAI implementation.

46. It is worth to mention that the Directorate of Energy of MINAE served as the main public counterpart during implementation, even though it had not been involved in the project design. Early in the execution phase, it became apparent that certain components—particularly the financial mechanism—required significant reformulation to remain viable and relevant.

47. CABEI's selection as the Executing Agency was based on its regional and local experience in developing financial instruments—although it operates as a second-tier bank— together with its extensive experience in regional project management, including initiatives in the energy sector. The involvement of other financial institutions in the design of the Revolving Loan Fund (RLF) was not documented, despite the potential to leverage prior experience to strengthen results. Once it became evident that the RLF could not be operationalized and the component was reformulated, constraints related to the procurement of equipment for third parties emerged, requiring responsibilities to be reassigned to U4E. CABEI demonstrated commitment to delivering the activities under its responsibility; however, efficiency was affected by recurring Project Manager turnover,

although it is worth noting that during certain periods the PM role was covered using CABEI's own resources

48. Energy suppliers of efficient equipment and energy service companies (ESCOs) were grouped as a single stakeholder, despite their potentially distinct roles. ESCOs are mentioned in Component 2 as beneficiaries of training (Output 2.3) on public procurement system requirements and integration, as well as in providing energy audit services and implementation under Components 1 and 3. However, beyond this, ESCOs may already have local experience in energy audits and public procurement, and may have faced several obstacles which could help identify additional barriers to implementing measures—both financial and procedural. This dimension of their potential contribution was not sufficiently reflected in the stakeholder analysis.

49. Waste compliance units and authorized waste handlers are also not mentioned as stakeholders. However, evidence shows that, through DIGECA, work was underway to develop a solution for environmentally sound end-of-life integrated management of disposed refrigerants (e.g., R-410A, R-134a, and R-22) and mercury contained in replaced lighting products and appliances. A gap analysis conducted to procure specific equipment demonstrates awareness and understanding of market capacities.

50. Gender/minority groups and indigenous peoples are mentioned in the ProDoc's socio-economic benefits section, but they were not included as stakeholders at the design stage, as indicated in Chapter A.3 of the ProDoc. They were only incorporated under Component 4 in dissemination activities, aligned with the project's role as a demonstrative catalyst to extend its impact from the public sector to other sectors.

E. Changes in Design during Implementation

51. The project design was originally led by the Energy Planning Secretariat, which no longer exists, and was transferred—just days before implementation began—to the Directorate of Energy. At that time, several aspects were identified for reformulation, particularly those of a regulatory nature. While not strictly a design change, this anticipated what later occurred with Component 3.

52. The main factor affecting project design during implementation was the identification of public-sector restrictions on accessing long-term financing (beyond one year), as well as the lengthy approval processes involved even for short-term financing. In addition, each loan required a sovereign guarantee and approval by the Legislative Assembly. This was confirmed through consultations with the Public Credit, during which the viability of the mechanism was examined in greater depth. Furthermore, CABEI was unable to provide loans of small size. Consequently, and given that the law could not be amended in the short term, MINAE -in agreement with the Steering Committee institutions- decided not to proceed with the RLF and to fully redesign Component 3.

53. From an implementation perspective, the funds originally allocated to the RLF were reassigned to conduct studies and develop tools to support the technical and financial viability of energy-efficiency measures, as well as to implement demonstration projects in key institutions (e.g., the health sector and the national refrigeration system).

54. As part of this revision, responsibilities were splitted between CABEI and U4E by mutual agreement, taking into account their respective expertise and agility in contracting and procurement processes.

55. The project underwent a total of five formal revisions, three of which granted no-cost extensions. Some adjustments were made to co-financing, although these did not affect the delivery of committed funds. In addition to the complete redesign of Component 3, delays were largely attributable to the impacts of the COVID-19 pandemic in 2021, which led to the closure of public and private entities and resulted in long periods before operations could resume at a reasonable pace. Delays were also linked to project-

managers and UNEP's specialists turnovers, with an impact on the timelines for engagement with the project, as well as on training in internal procedures and reporting requirements on both sides. .

F. Project Financing

56. This MSP project was financed through a GEF TF grant for USD 2,000,000. Co-financing (all In-kind) was anticipated from MINAE, CABEI, UNEP, ICE, COOPELESCA, COOPEGUANACASTE, ESPH, CNFL, NLTC, Whirpool and Mabe to the value of USD 4,972,452.
57. Total GEF budget expenditure was USD 1,900,134. (95% of original budget).
58. Co-financing realised was USD 4,619,269 (93% of planned co-finance).
59. GEF financing and co-financing were adequate to achieve the project objectives, with a reallocation of funds—primarily GEF grants—undertaken during the redesign of Component 3.
60. Reported co-financing consisted of 10.8% in loans provided by CABEI, while the remaining 89.2% was contributed in kind. Private companies did not deliver the co-financing committed at the project design stage, amounting to USD 600,000. MINAE, for its side, contributed USD 1,014,806, which is significantly lower than the USD 2,000,000 originally committed. A substantial share of the unmet committed co-financing was offset by ESPH, which executed a total of USD 2,793,900 compared to the USD 1,452,300 initially committed.
61. Table 4. Co-financing, includes Private companies and cooperatives (considered as NGOs)

Table 4: Co-financing table

Co-financing (Type/Source)	UNEP own Financing (US$1,000)		Government (US$1,000)		Other* (US$1,000)		Total (US$1,000)		Total Disbursed (US$1,000)
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Grants	25	30					25	30	30
Loans					500	500	500	500	500
Credits									
Equity investments									
In-kind support			3,530	3,894	917	195	4,447	4,089	4,089
Other (*)									
Totals	**25**	**30**	**3,530**	**3,894**	**1,317**	**695**	**4,972**	**4,619**	**4,619**

* This refers to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries.

II. REVIEW METHODS

A. UNEP's Review Approach

62. In line with UNEP Evaluation Policy and the UNEP Programme and Project Management Manual, the terminal review was undertaken at operational completion of the project to assess performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The terminal review has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned.

63. The main target audiences for the review findings are UNEP and Costa Rica's government focal point (MINAE). In a local context, recommendations shall be shared with private sector, civil society, financing sector and other key stakeholders to enhance coordination and country's ability for promoting electric mobility. As the Terminal Review promotes learning and improvement at all project stages, UNEP is also part of the target audience of this review as it is intended to highlight achievements and lessons learned for future interventions of this type in other regions or countries.

64. In line with the UNEP Evaluation Policy and the UNEP Programme Manual, the terminal review has been carried out using a set of 9 commonly applied review criteria which include: (1) Strategic Relevance , (2) Quality of Project Design, (3) Nature of External Context, (4) Effectiveness (incl. availability of outputs; achievement of outcomes and likelihood of impact), (5) Financial Management, (6) Efficiency, (7) Monitoring and Reporting, (8) Sustainability and (9) Factors Affecting Project Performance and Cross-Cutting Issues (see Annex II: Review Framework for more details on each review criterion).

65. Most review criteria are rated on a six-point scale as follows: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability and Likelihood of Impact are rated from Highly Likely (HL) down to Highly Unlikely (HU) and Nature of External Context is rated from Highly Favourable (HF) to Highly Unfavourable (HU). The ratings against each criterion are 'weighted' to derive the Overall Project Performance Rating. The greatest weight is placed on the achievement of outcomes, followed by dimensions of sustainability.

66. The UNEP Evaluation Office has developed detailed descriptions of the main elements required to be demonstrated at each level (i.e. Highly Satisfactory to Highly Unsatisfactory) for each review criterion. The reviewer has considered all the evidence gathered during the review in relation to this matrix to generate review criteria performance ratings.

67. In addition to the 9 review criteria outlined above, the review addresses a number of strategic questions that were formulated in the Terms of Reference. These questions were posed by the UNEP Evaluation Office in conjunction with members of the Project Team.

68. For projects funded by the GEF, findings from the review are to be uploaded in the GEF Portal. To support this process, review findings related to the 5 topics of interest to the GEF are summarised in Annex IX. The intended action/results on the 5 topics were described in the GEF CEO Endorsement and Approval documents. The 5 topics are: i) performance against GEF's Core Indicator Targets; ii) engagement of stakeholders; iii) gender-responsive measures and gender result areas; iv) implementation of management measures taken against the Safeguards Plan and v) challenges and outcomes regarding the project's completed Knowledge Management Approach.

69. This review adopted a participatory approach, consulting with project team members, partners and beneficiaries at several stages throughout the process. Central to the review

was the analysis and reconstruction of the project's Theory of Change. Consultations were held during the review inception phase to arrive at a nuanced understanding of how the project intended to drive change and what contributing conditions ('assumptions' and 'drivers') would need to be in place to support such change. The (reconstructed) Theory of Change, supported by a graphic representation and narrative discussion of the causal pathways, was discussed further with respondents during the data collection phase, and refined as appropriate. The final iteration of the Theory of Change is presented in this final review report and has been used throughout the review process.

B. Data Collection

Primary data sources

70. During and after the inception stage, the reviewer undertook a thorough review of all project-related documents provided by the Implementing Agency (UNEP) and the Executing Agency (CABEI), and also virtual meetings with the IA Project Specialist and EA Project Manager. The full list of documents can be found in Annex IV.

71. Sampling Strategy: The selection of key stakeholders to be interviewed was made by the reviewer, the Project Manager from CABEI and the Project Specialist from UNEP. Several documents were used for identification, e.g. stakeholder's description in CEO Endorsement Document, Minutes from Steering Committee, dissemination meetings, technical committees, and validated through experience in project development. The overall sampling frame for interviews can be found in Table below.

Table 5: Review respondents and field visits

Stakeholders - Individuals			A. Total number involved (M/F)	B. Number contacted (M/F)	Sample size (% B/A)[10]	C. Total number responded Total (M/F)	Response rate (% C/B)[11]
Project Team	**Project Team** (with management responsibilities e.g. Project Management Unit)	Implementing agency	4 (1/3)	4 (1/3)	100%	4 (1/3)	100%
		Executing agencies	7 (2/5)	4 (2/2)	57%	4 (2/2)	100%
Beneficiaries	**Direct Beneficiaries:** (e.g. duty bearers, gatekeepers, training participants, etc.) **Indirect Beneficiaries:** (e.g. household members, civil society representatives, group members, etc.)		18 (13/5) 0(0/0)	14 (10/4) 0 (0/0)	78% -	14 (10/4) 0 (0/0)	100% -
Stakeholders - Entities			**A. Total number involved**	**B. Number contacted**	**Sample size (% B/A)[12]**	**C. Total number responded**	**Response rate (% C/B)[13]**
Partners	**Project implementing/ executing partners** (receiving project funds)		4	3	75%	3	100%
	Project collaborating/ contributing partners[14] (not receiving project fund)		5	3	60%	3	100%
Field Visits	**Region /country / locality[15]**		**A. Total number sites**	**A. Number sites visited**	**Sample Size (%B/A)[16]**		
	Latin America and the Caribbean		5	4	80%		

72. Data collection tools: Stakeholder meetings were conducted during the field mission, mostly in person, with the exception of three interviews held virtually: (i) U4E, based in Panama; (ii) Bettergy, with a local partner in Costa Rica but PM based in Spain; (iii) Asher Lessels, in France at the time of the Field Mission. All planned interviews were completed, and no refusals were encountered.

73. In all cases, the meetings were held individually with each institution in order to avoid any potential interference. A table with the consulted people during the review can be found in Annex III. Based on schedule and logistical limitations, field visits were focused on the main beneficiaries.

Strategies for inclusivity

74. Actions taken to increase response: In order to improve the response rate of the institutions involved, stakeholders were introduced by the PM via email. Daily follow-ups were conducted to receive a response or to be directed to other representatives of the institutions.

Secondary data sources

75. The project did not undertake significant collection of secondary data sources. Reference can be made to information exchanged with some partners during the field mission and to publicly available information online: studies by PIMA assessing new energy-efficiency

[10] Percentage of people involved in the project who were contacted.
[11] Percentage of people contacted who responded.
[12] Percentage of entities involved in the project who were contacted.
[13] Percentage of entities contacted who responded.
[14] Contributing partners may be providing resources as either cash or in-kind inputs (e.g. staff time, office space etc.).
[15] In case of a global project, the unit of analysis is 'region'. In case of a regional or multi-country project, the unit of analysis is 'country'. In case of a single country project, the unit of analysis is 'locality', which could refer to a city, town, village, etc.
[16] Percentage of total number project sites in each region, country or locality that were visited.

investments, a presentation by CIRE on the background of the public-sector efficiency market, and exchanges regarding strategies from Hospital Blanco Cervantes. In addition, institutional videos and deliverables published on websites and social media platforms were consulted.

C. Data Analysis

76. The study has been guided by the evaluation questions for each stakeholder and the expertise field of the interviewed, as well as by the key questions included in the Terms of Reference (TOR) of the TR. The list of all the documents reviewed is available in Annex IV.

77. The findings were clustered by review questions grouped under the main performance criteria. The financial analysis is limited to the assessment of the consistency of actual versus planned contributions and their correspondence to the project implementation needs (cost-effectiveness analysis). It is based on the project budget breakdown and connected, where feasible, to the main activities identified in the project's implementation.

78. Preliminary findings were presented in a meeting on November 20th, 2025 to the UNEP's Climate Change Division.

D. Limitations and Mitigation Strategies

79. The reviewer did not encounter any significant limitations during the review. Project documentation and data sources were available and accessible. Willingness to provide information was evident and sincere openness from stakeholders, describing the execution process and at the same time raising the aspects that could have been made, and are still to do.

E. Ethical Considerations

80. Throughout this review process and in the compilation of the Final Terminal Review Report, efforts have been made to represent the views of both mainstream and more marginalized groups. Data were collected with respect for ethics and human rights issues. All pictures were taken, and other information gathered after prior informed consent from people, all discussions remained anonymous, and all information was collected according to the UN 'Standards of Conduct'.

III. Theory of Change at Review

81. The project includes a Theory of Change in the design stage, presented as Annex M in the ProDoc, and available in Annex G in this report. Although the theory of change is reasonably well-prepared, Component 3 was adjusted as it fully changed during execution, and was updated.

82. The project is structured into four components, where the Outcomes are established, and for each of them a set of Outputs is defined. The structuring into four components was very appropriate, covering the main elements that lay the foundations for scaling up efficient appliances in the public sector once the project is completed.

83. As previously noted, a key element of the theory of change was challenged by the complete reformulation of Component 3, which had originally been designed to establish a Revolving Loan Fund (RLF). The project design assumed that the regulatory framework would allow the use of such a financial instrument in the public sector; however, this assumption did not hold, and the resulting regulatory barriers could not be resolved during implementation. In this context, it is important to highlight that the Treasury Ministry was unable to address the issue and was not represented in the last two Project Steering Committee (PSC) meetings.

84. Some minor revisions were proposed at outcomes level, particularly in Component 2 - adding an item that arise from the outputs and is important to prepare the causal pathway. A revision was also proposed at Output level in Component 3 –after the updates in the whole component- adding Treasury and other actors as key to update regulation.

85. Additionally, some elements were added and/or adjusted at the driver and assumption level to strengthen the connection between the project's outputs and outcomes and the desired long-term impact; thus, the Theory of Change was reconstructed in the Inception phase.

86. The drivers were focused on understanding the motivations of each of the stakeholders, who are the driving forces behind the technology change in the public sector: the Government as the creator of a regulatory framework, procurement platforms and support; appliance and energy services companies as providers; and financiers identifying the existence of a market with high potential.

87. On the other hand, assumptions were prepared to provide support the expected project outcomes, as cornerstones without which it is not possible to think about the scaling up of projects and long-term sustainability.

88. Finally, intermediate results were rephrased to provide a broader view of the results, and Intended Impact included co-benefits far than just GHG emissions mitigation.

Table 6: Justification for reformulation of results statements

Formulation in original project document(s)	Formulation for Reconstructed TOC at Review Inception (RTOC)	Justification for Reformulation
(LONG LASTING) IMPACT		
Greenhouse Gas Emissions mitigated	Intended Impact Energy Consumption reduction and Greenhouse Gas Emissions mitigated Other impacts: * Urban quality life and resilience is enhanced * Imported hydrocarbons Dependence is reduced * Risk of improper handling of hazardous waste is minimized	Additional impacts were expressed throughout the ProDoc but not presented in the ToC
INTERMEDIATE STATES		
Conventional and obsolete appliances are replaced in the public sector	Conventional and obsolete appliances are replaced on a large scale in the public sector, considering an environmentally sound end-of-life integrated management	Large scale was added to show the scaling up effect of the project, and environmental aspects were included
COMPONENTS		
Component 3 - Establishment of a revolving fund (RLF) for the financing of large-scale replacement programs in the public sector	Component 3 - Regulation, financial tools and empirically based guidelines for the financing of large-scale replacement programs in the public sector	Changed in Project revision #3 – dec 2022
PROJECT OUTCOMES		
2. Suppliers provide the public sector with electric appliances that comply with required energy efficiency specifications (lighting, air conditioners and refrigerators) and energy efficiency services.	2. Suppliers provide the public sector with electric appliances that comply with required energy efficiency specifications (lighting, air conditioners and refrigerators) and energy efficiency services (audits and implementation).	ESCO services were explicated in order to bring clarity on the matter.

Formulation in original project document(s)	Formulation for Reconstructed TOC at Review Inception (RTOC)	Justification for Reformulation
No text available	2.b. Key officials in public sector trained to propose or conduct energy audits, identify opportunities and benefits and procure efficient appliances.	A new outcome was added as a result of the activities, key to achieve the energy audits that lead to a successful procurement of efficient appliances.
3. A revolving fund is in place for the financing of procurement of efficient appliances, that ensures sustainability of large-scale replacement programs	3. Regulation, financial tools and empirically based guidelines are in place for the financing of procurement of efficient appliances, that ensures sustainability of large-scale replacement programs	Changed in Project revision #3 – dec 2022
OUTPUTS		
3.1 RLF Steering Committee created		Deleted in Project revision #3 – dec 2022
3.2 Legal, financial and operational aspects of the RLF assessed to ensure sustainability of large-scale replacement programs in the public sector		Deleted in Project revision #3 – dec 2022
3.3 Accounting, auditing and control system deployed to ensure transparency from the RLF		Deleted in Project revision #3 – dec 2022
3.4 Seed capital allocated to operationalize the RLF		Deleted in Project revision #3 – dec 2022
3.5 Demonstration projects implemented to showcase energy efficiency in the public sector		Deleted in Project revision #3 – dec 2022
	3.1B Regulations which overcome barriers to procurement of public building energy efficiency appliances and services, for adoption by MINAE, Treasury and other involved public actors.	Added in Project revision #3 – dec 2022. A slight rephrasing to include other key stakeholders with responsibilities on public purchases regulations.
	3.2B Development of operational manual for such procurement, based on evidence from demonstrations in public buildings	Added in Project revision #3 – dec 2022
	3.3B Financial institutions, including Banco Nacional de Costa Rica and Banco de Costa Rica, and private sector service providers have access to financial tools and feasibility studies and enhanced capacity for financing energy efficiency appliances and services in public buildings	Added in Project revision #3 – dec 2022
	3.4B Demonstration projects implemented to showcase energy efficiency in the public sector	Added to strength a vital set of activities that are included as deliverables in Output 3.2B, but not visible in the ToC diagram.

Table 7:

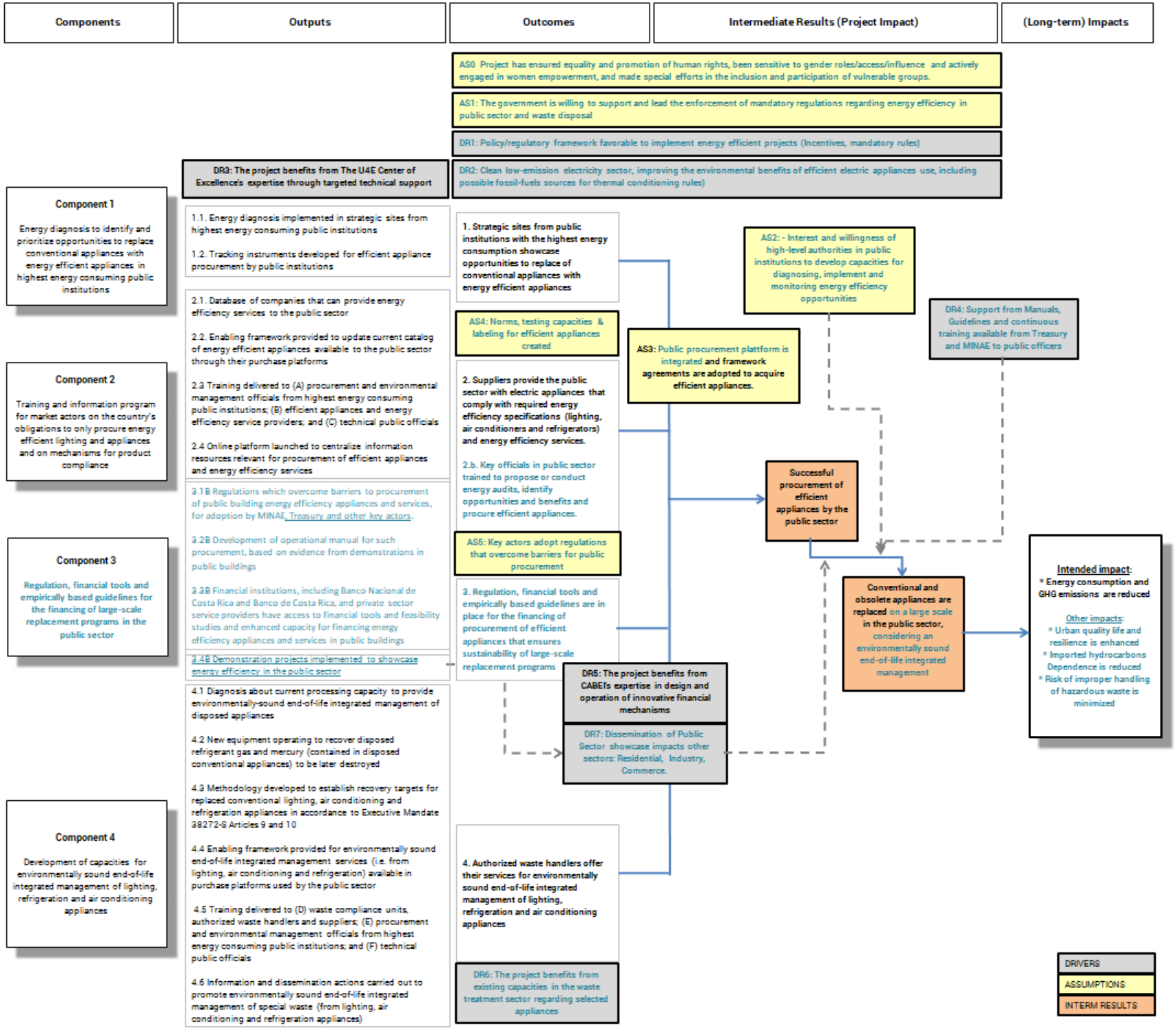
Table 7: Justification for reformulation / expansion of drivers and assumptions

Formulation in original project document(s)– *insert source/date*	Formulation for reconstructed ToC at inception (RTOC)	Justification for reformulation
DRIVERS		
	DR 1: Policy/regulatory framework favorable to implement energy efficient projects (Incentives, mandatory rules)	Established to explicitly identify the external drivers that foster sector development.
	DR 2: Clean low-emission electricity sector, improving the environmental benefits of efficient electric appliances use, including possible fossil-fuels sources for thermal conditioning	Established to explicitly identify the external drivers that foster sector development.
The project benefits from The U4E Center of Excellence's expertise through targeted technical support	DR 3: The project benefits from The U4E Center of Excellence's expertise through targeted technical support	Unchanged
	DR 4: Support from Manuals, Guidelines and continuous training available from Treasury and MINAE to public officers	Established to explicitly identify the external drivers that foster sector development.
The project benefits from CABEI's expertise in the design and operation of innovative financial mechanisms	DR 5: The project benefits from CABEI's expertise in the design and operation of innovative financial mechanisms	Unchanged
	DR 6: The project benefits from existing capacities in the waste treatment sector regarding selected appliances	Established to explicitly identify the external drivers that foster sector development.
	DR7: Dissemination of Public Sector showcase impacts other sectors: Residential, Industry, Commerce	Established to explicitly identify the external drivers that foster sector development.
ASSUMPTIONS		
Human rights and gender equality[17]	ASO (cross-cutting): Project has ensured equality and promotion of human rights, been sensitive to gender roles/access/influence and actively engaged in women empowerment, and made special efforts in the inclusion and participation of vulnerable groups	No specific commitment on that regard was included within the project.
	AS1: The government is willing to support and lead the enforcement of mandatory regulations regarding energy efficiency in public sector	Integrated into the theory of change to reinforce the causal pathway
	AS2: - Interest and willingness of high-level authorities in public institutions to develop capacities for diagnosing, implementing and monitoring energy efficiency opportunities	Integrated into the theory of change to reinforce the causal pathway
Framework agreements are adopted by public procurement platforms	AS3: Public procurement platform isintegrated and framework agreements are adopted to acquire efficient appliances	Enhanced
	AS4: Norms, testing capacities and labeling for efficient appliances created	Integrated into the theory of change to reinforce the causal pathway
	AS5: Key actors adopt regulations that overcome barriers for public procurement	Integrated into the theory of change to reinforce the causal pathway
The Revolving Fund attracts further investments after project completion	-	Out of context after Component 3 reformulation at Project Revision #3

[17] If the project design document and the framework are silent on human rights and gender equality, the following assumption must be included in the TOC: 'The project works toward the UN principles on human rights and gender equality'.

Figure 2:

Figure 2: Theory of Change at review



IV. Review Findings

A. Strategic Relevance

Alignment to UNEP's UNEP Medium Term Strategy[18] (MTS), Programme of Work (POW) and Strategic Priorities

Table 8: Alignment to UNEP Medium Term Strategy (MTS), Programme of Work (POW), Strategic Priorities

UNEP strategic document	Alignment with UNEP's mandate and thematic priorities	Level of alignment
MTS (2018-2021)[19]	The GEF 9283 Project is directly aligned with UNEP's Medium-Term Strategy (MTS) 2018–2021, as it contributes to the Climate Change and Waste and Air Quality subprogrammes. In particular, it promotes the transition toward low-emission economic development, supports the efficient use of energy and resources through the replacement of inefficient equipment in the public sector, and advances the environmentally sound management of waste from electrical and electronic equipment. Furthermore, the project reflects the operational principles of the MTS—such as the integration of regulatory frameworks, inter-institutional cooperation, and the strengthening of national capacities—thereby contributing to Sustainable Development Goals 7, 12, and 13 through sustainable public procurement policies and financial mechanisms that reinforce environmental governance and institutional resilience	Full
POW (2018-2019)[20]	The GEF 9283 Project is directly aligned with UNEP's Programme of Work (PoW) 2018–2019, particularly with the Resource Efficiency, Climate Change, and Chemicals, Waste and Air Quality subprogrammes, which are prioritized in the document to support the transition toward sustainable consumption and production patterns and the reduction of emissions. The intervention contributes especially to the expected accomplishment of the Climate Change subprogramme, which aims for 'Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies". Likewise, the project's efforts in sustainable public procurement and institutional strengthening reflect PoW guidance for integrating resource efficiency into public policies, supporting green financial mechanisms, and improving the environmental management of products and waste.	Full
Bali Strategic Plan for Technology Support and Capacity Building[21]	The project is consistent with the Bali Strategic Plan for Technology Support and Capacity Building, as it strengthened national institutional capacities, supported the adoption of energy-efficient technologies, enhanced regulatory frameworks, and enabled technical cooperation among public institutions and international partners	Full
South-South Cooperation[22]		N/A

[18]UNEP's Medium-Term Strategy (MTS) is a document that guides UNEP's programme planning over a four-year period. It identifies UNEP's thematic priorities, known as Sub-programmes (SP), and sets out the desired outcomes, known as Expected Accomplishments (EAs), of the Sub-programmes. https://www.unenvironment.org/about-un-environment/evaluation-office/our-evaluation-approach/un-environment-documents.
[19] Refer to the MTS under which the project was approved.
[20] Refer to the POW under which the project was approved.
[21] If applicable
[22] If applicable

Alignment to Donor/GEF/Partners Strategic Priorities

Table 9: Alignment to Donor/GEF/Partner Strategic Priorities

Donor or partner strategic document	Alignment with donor or partner strategic priorities	Level of alignment
GEF	The project is fully aligned with the strategic priorities of GEF-6, particularly within the Climate Change Mitigation focal area (CCM-2 and CCM-3), by promoting energy-efficient lighting, refrigeration and air-conditioning technologies, strengthening national standards and procurement systems, enabling investments in public-sector energy efficiency, and supporting long-term low-carbon development pathways. Additionally, the project contributes to the GEF-6 Chemicals and Waste objectives (CW-2) through environmentally sound management of end-of-life equipment, including mercury-containing lighting and high-GWP refrigerants.	Full

Relevance to Global, Regional, Sub-regional and National Priorities

Table 10: Relevance to Global, Regional, Sub-regional and National Environmental Priorities

Strategic document or agreement	Alignment with global, regional, sub-regional, national environmental priorities	Level of Alignment
National Climate Change Strategy / NDC Commitments	The project supports Costa Rica's national climate commitments by contributing to GHG emission reductions through improved energy efficiency in the public sector. By fostering the replacement of high-consumption appliances and supporting regulatory and market transformation, the project advances the implementation of mitigation actions included in the NDCs.	Full
National Development Plan (PND) 2015–2018	The GEF 9283 is aligned with the PND's pillar of sustainable economic growth, particularly through its contribution to national goals on energy efficiency. By promoting the replacement of inefficient equipment in public institutions and reducing operational energy costs, the project supports institutional modernization and improved public-sector performance.	Full
National Energy Plan (PNE) / VII PNE 2015–2018	The project is consistent with the PNE objectives of reducing national energy demand, strengthening energy management in the public sector, and promoting the uptake of high-efficiency technologies. It contributes directly through technical tools, energy diagnostics, procurement criteria, and mechanisms that operationalize several mandates of the PNE.	Full
Institutional Environmental Management Programme (PGAI)	The GEF 9283 is closely connected to the PGAI's energy component by providing instruments that help public institutions comply with the requirement to procure only energy-efficient equipment. It also strengthens institutional capacity through diagnostics, training, and tracking tools incorporated into public procurement processes.	Full

Complementarity with Existing Interventions/Coherence

Table 11: Complementarity with existing interventions/coherence

Other initiatives by UNEP or other organizations	**Complementarity** (including collaboration, coordination and overlap or duplication)	**Level of Alignment**
United for Efficiency (U4E) Global Programme – Parent Programme	The GEF 9283 is directly embedded within the U4E Global Programme, serving as a child project that applies U4E's global methodologies, technical tools, and market transformation approaches at the national level. The project benefits from U4E's expert network, harmonized tools for MEPS development, and global knowledge resources, ensuring consistency while avoiding duplication of analytical or technical work already produced under U4E	Full
SE4ALL Global Project (UNEP)	The project aligns with and complements the SE4ALL Global Project, particularly in advancing public-sector energy efficiency. The collaboration ensures coherence in policy guidance and avoids overlap by focusing the GEF 9283 specifically on efficient appliances in public institutions, while SE4ALL covers broader planning and policy frameworks. Joint participation of UNEP teams strengthens knowledge transfer and capacity-building coherence.	Full
CABEI Regional Energy Efficiency Financing Initiatives	The project builds on CABEI's existing regional financial mechanisms for energy efficiency and renewable energy. By coordinating closely with the Bank during the design of the revolving fund, the project avoids creating parallel financing structures. Instead, it strengthens and integrates with CABEI's established channels, enhancing regional coherence and financial sustainability.	Medium
Sustainable Public Procurement and Ecolabelling (SPPEL) Programme (UNEP)	There is strong thematic complementarity with SPPEL, as both initiatives support sustainable public procurement systems. The GEF 9283 leverages SPPEL's institutional experience, procurement criteria, and platforms while tailoring them to Costa Rica's energy-efficiency context. This prevents duplication and ensures coordinated advancement of environmental procurement standards	Full

89. The GEF 9283 demonstrates strong coherence with UNEP's strategic frameworks and complementary initiatives by operating as a child project of the United for Efficiency (U4E) Global Programme, ensuring methodological consistency with global best practices on MEPS development, market transformation, and public procurement of efficient appliances. Its alignment with the Medium-Term Strategy (MTS) and Programme of Work (PoW) is reinforced through its direct contribution to resource efficiency, climate mitigation, and waste-management outcomes. At the national level, the project is carefully integrated with Costa Rica's National Energy Plan, National Development Plan, Institutional Environmental Management Programme (PGAI), and NDC commitments, ensuring that regulatory strengthening, procurement tools, and capacity-building efforts respond to existing policy mandates rather than duplicating parallel processes.

90. Complementarity is further enhanced through structured coordination with UNEP initiatives such as SE4ALL and SPPEL, which provide policy-level guidance and procurement frameworks that the GEF 9283 adapts to the specific context of public-sector appliance efficiency. Collaboration with CABEI ensures that financial mechanisms build upon established regional instruments, avoiding the creation of redundant structures. Engagement with national agencies (MINAE, DIGECA, CONACE) and private-sector actors (appliance manufacturers, energy service companies, and waste-management organizations) ensures coherence with ongoing national initiatives and industry programmes, strengthening synergies in training, standards implementation, and environmentally sound end-of-life management. Through this integrated architecture, the project maximizes complementarity while minimizing overlap, contributing to national and regional energy-efficiency goals in a coordinated and cost-effective manner.

Findings Statements on Strategic Relevance and Complementarity

91. The project's complementarity and relevance with other initiatives was very high. CABEI's involvement as a development bank—with existing regional financial instruments for energy efficiency within its role as a second-tier lender—deserves particular mention. However, the absence of a more in-depth assessment involving local banks and public procurement specialists ultimately affected the project's potential impact, although overall effectiveness was preserved after the redesign of Component 3. .

Rating for Strategic Relevance: **Highly Satisfactory**

Rating for Alignment to UNEP MTS, POW and Strategic Priorities: Highly Satisfactory
Rating for Alignment to Donor/GEF/Partner Strategic Priorities: Highly Satisfactory
Rating for Relevance to Global, Regional, Sub-regional and National Priorities: Highly Satisfactory
Rating for Complementarity with Existing Interventions/Coherence: Highly Satisfactory

B. Quality of Project Design

Table 12: Summary of quality of project design assessment ratings

	SECTION	RATING (1-6)	Summary Assessment
A	Project Preparation	4	The situational analysis clearly outlines Costa Rica's energy-efficiency context, particularly in the public sector, providing a solid justification for the intervention, while the problem analysis effectively traces root causes and barriers through a structured Problem Tree. However, weaknesses in the regulatory framework were underestimated by MINAE and UNEP, later requiring a full redesign of Component 3 and limiting market upscaling. The stakeholder analysis is comprehensive, mapping key actors such as MINAE, CABEI, the Ministry of Finance, the Ministry of Health, and U4E, though some groups are defined too broadly and key contributors—especially gender and minority groups—were not actively consulted during design. Equality considerations are addressed only modestly, mainly through promoting efficient appliance use and improved waste management. The project also includes detailed budgets, work plans, and procurement arrangements for each component
B	Risk identification and Safeguards	5	The project's risk matrix covers political, organizational, social, environmental, and climate-related risks, outlining their impacts and mitigation measures with clear institutional roles. Most risks stem from the public-sector-led nature of the project, though private sector participation remains important. Environmental risks are addressed mainly through Component 4 on waste management, indirectly linked to broader risks like reduced co-financing or delays. Social risks are considered moderate, reflecting the project's limited focus on dissemination activities
C	Governance and Supervision Arrangements	6	The project's governance structure is appropriate for its context, with clearly defined roles and responsibilities that align with each stakeholder's mandate, including UNEP's. The Steering Committee's composition and functions are well established, ensuring coordinated oversight. A key recommendation is to assign a specific role to the Treasury to address public-sector regulations and restrictions related to investment amounts and execution timeline
D	Partnerships	5	The project design includes a clear assessment of partner capacities, assigning roles according to their strengths and expected contributions, with U4E's technical support and its links to efficiency-focused partners particularly emphasized. Some stakeholder relationships, such as with ESCOs and academia, were initially vague but became more defined during implementation. Local banks were not clearly integrated at the design stage, though they were later incorporated into Component 3's outputs and activities.

	SECTION	RATING (1-6)	Summary Assessment
E	Strategic Relevance	6	The project document describes UNEP MTS, PoW and strategic priorities and proves alignment and relevance with the project. It also aligns with the GEF focal area and strategic priorities. The project document thoroughly describes and proves alignment with national environmental priorities. The project document describes a set of other interventions and proves complementarily with them
F	Logical Framework and Causality	4	The project document clearly outlines barriers, root causes, and proposed actions, with a coherent causal pathway supported by a strengthened Theory of Change, though weaknesses in the regulatory framework—later requiring a full redesign of Component 3—limited market scaling. Outcomes are realistic and backed by SMART indicators, verified through baseline data, with only a minor adjustment made at inception to increase visibility under Outcome 2. Outputs are clearly described and largely verifiable through their formulation, despite lacking specific targets. While no indicators were included for marginalized groups or gender-responsive tracking, expected impacts on these groups are indirect.
G	Financial Planning	5	The project presents complete and well-structured financial information, with a clear budget across UNEP lines and reasonable allocations for technical support, diagnostics, training, and equipment. Co-financing is largely based on in-kind contributions and is generally realistic, though some estimates—such as those from MINAE and ESPH—appear overstated relative to project duration. CABEI's proposed USD 500,000 for energy-efficiency credit lines should not have been considered in-kind co-finance, and these funds ultimately became unnecessary after the full redesign of Component 3 and the removal of the RLF.
H	Efficiency	5	The project design effectively built on existing national and regional initiatives—such as UNEP's SE4ALL Global Project and the Global Leapfrogging programme—ensuring strong complementarity and avoiding duplication, while also drawing on CABEI's regional financing experience. A thorough review of related projects helped target activities specifically to the public sector. A no-cost extension was later required due to start-up delays, challenges in hiring PMU staff, and COVID-19 restrictions
I	Monitoring	5	Monitoring responsibilities were assigned to the Project Manager, responsible for monitoring and reporting on progress based on Project Results Indicators, and informs UNEP of any delays to adopt corrective measures. Project risks and assumptions were considered to be regularly monitored. The M&E budget is effectively prepared and includes data collection methods, responsibilities and frequency. Activities such as the Inception Workshop, PSC meetings, midterm review, terminal review, and audits have dedicated budget allocations.
J	Sustainability / Replication and Catalytic Effects	3	The project design incorporates socio-political, institutional, financial, and environmental dimensions of sustainability, with key scaling-up elements implied through outputs such as the procurement platform, training, a planned public-sector revolving fund, energy audits, and support to waste management. However, important aspects—such as how the revolving fund would interact with banks, how institutions would finance audits or maintain training efforts, and how regulatory barriers to public-sector investment would be addressed—were insufficiently detailed and later hindered replication. Dissemination plans are minimal, relying mainly on an online platform and existing stakeholder channels, while Component 4's actions on end-of-life management are only briefly described.
K	Learning, Communication and Outreach	3	The project's knowledge management strategy is only lightly developed, centered on an external online platform for procurement-related information and internal knowledge exchange led by U4E and MINAE directorates, but lacking clear guidance on platform design, dissemination objectives, or user-oriented structure. Information-sharing mechanisms are broadly outlined through participation in task forces and technical committees, yet the articulation of communication flows could have been stronger, and frequent changes in project management further affected consistency

	SECTION	RATING (1-6)	Summary Assessment
	Total (Weighted) Score:	***4.43***	*(Full analysis in the Inception Report, available from the Project/Task Manager)*

92. The project's preparation was thorough in its situational, problem, stakeholder, risk, and financial analyses, supported by a logical Theory of Change, SMART indicators, and alignment with UNEP, GEF, and national priorities. Key actors such as MINAE, CABEI, the Ministry of Finance, U4E, and others were mapped to specific activities, and partnerships were largely well structured, with U4E providing essential technical support. The design leveraged existing global and regional initiatives and included complete budgeting, procurement planning, and defined governance and monitoring structure. However, major regulatory and procurement constraints were underestimated, particularly those affecting public-sector investment, which later forced a full redesign of Component 3, constrained implementation, and limited the project's ability to scale up—especially regarding the revolving fund. Some stakeholder categories were too broad, gender and vulnerable groups were insufficiently integrated, and knowledge-management and dissemination strategies lacked depth.
93. Sustainability considerations were incorporated across socio-political, institutional, financial, and environmental dimensions, with scaling-up intended through a procurement platform, capacity-building, audits, demonstrations, and waste-management measures. Yet sustainability was weakened by gaps in regulatory analysis, limited articulation of how financial mechanisms would operate with local banks, and minimal planning for long-term institutional support. Environmental and social risks were well documented, although environmental risks in Component 4 and social inclusion aspects could have been more explicit. Implementation delays—due to late PMU staffing and COVID-19—required a no-cost extension, and communication continuity was affected by project-management turnover. Overall, while the project design was strong in structure and alignment, its underestimation of regulatory barriers and limited attention to equality, dissemination, and knowledge management reduced its transformative potential.

Rating for Project Design: Satisfactory

C. Nature of the External Context

94. Several external and unforeseen factors in the project's implementation environment significantly constrained performance. First, the lingering effects of the COVID-19 pandemic created a challenging institutional landscape. Public and private entities were still undergoing rehabilitation processes, dealing with staff shortages, reorganization, and shifting priorities, all of which slowed decision-making and reduced their capacity to fully engage with the project. In addition, required consultations with the Public Credit authority introduced additional layers of review and approval that extended timelines beyond initial projections. Coordination and communication with several public institutions also proved more difficult than anticipated; while some partners participated actively, others showed limited interest or availability, which constrained the project's ability to implement activities that relied on multi-institutional collaboration.
95. Furthermore, the change of government following the 2022 elections created uncertainty regarding the continuity of Costa Rica's long-standing environmental and sustainability agenda. This shift affected the prioritization of the actions planned under the project, leading to periods of stagnation and inactivity.
96. At last, several operational challenges emerged that were not foreseen during the design phase. The domestic market lacked availability of key energy-efficient technologies for

lighting, air conditioning, and refrigeration. This forced the project to rely heavily on imported equipment, increasing exposure to global supply chain pressures, including geopolitical disruptions, international conflicts, and climate-related events. These external dependencies delayed procurement and implementation of demonstration projects.

Rating for Nature of the external context: Moderately Favourable

D. Effectiveness

97. Indicators and targets were developed in the Results Framework, although some shortcomings were identified regarding the extent to which they adequately reflect the intended results, as the Results Framework does not include indicators or targets for the Outputs.

Availability of Outputs

Table 13: Availability of outputs

	Narrative Assessment *Discuss the nature and scale of outputs delivered, as well timeliness, quality, and utility to intended beneficiaries*	**Sources of Information/Evidence** *List specific sources of information for each output and its indicator/s and mention triangulation efforts*
Output 1.1: Energy diagnosis implemented in strategic sites from highest energy consuming public institutions	Level of delivery: Fully delivered Energy audits for 20 public institutions were completed, including 10 Level 1 audits and 10 Level 2 audits, carried out by reputable ESCOs. The results are available in individual reports, which clearly demonstrate the consultant's expertise and the depth of the analysis conducted. These audits proved useful for the beneficiaries, as they enabled the identification of opportunities and served as the basis for selecting the demonstration projects implemented under Component 3.	Audit reports (20 in total, with public access in MINAE's website) Interviews with project team and implementation partner (CIRE)
Output 1.2: Tracking instruments developed for efficient appliance procurement by public institutions	Level of delivery: Partially delivered The tool was developed at the request of U4E and presented to representatives of public institutions. It is a web-based tool hosted on MINAE servers. Tough the output should be considered Fully delivered in terms of acknowledging receipt of the deliverable from MINAE, during the Mission it became evident that the tool is not being used by the public institutions consulted. Its development process appeared to have been largely internal between CABEI and U4E together with the developer, and during review stages (e.g., with CIRE) several comments regarding necessary adjustments were raised. MINAE also bears part of the responsibility for providing closer oversight of the tool's development, as the institution responsible for its future implementation and use within the PGAI framework. The tool appears technically sound; however, it requires further refinement to better align it with user needs and the national market context, as well as strengthened training efforts. Its effective use should be linked to the implementation of the PGAI and to the reporting of the associated indicators—an element not yet developed but essential for its adoption	Project reports/PIRs Interviews with project team, MINAE , CIRE, U4E and beneficiaries from public sector

	Narrative Assessment *Discuss the nature and scale of outputs delivered, as well timeliness, quality, and utility to intended beneficiaries*	**Sources of Information/Evidence** *List specific sources of information for each output and its indicator/s and mention triangulation efforts*
Output 2.1: Database of companies that can provide energy efficiency services to the public sector	Level of delivery: Fully delivered Standards for testing (certification standards) were developed and approved to complement existing standards for lighting, refrigeration, and air-conditioning equipment, as well as system-management standards and guidelines for energy audits. A survey was prepared to assess company adherence to the SICOP platform for offering energy-efficient products and services.	Norms proposals (8) and Deliverables reports. Interviews with project team and LEE from ICE. Report on ESCOs survey
Output 2.2: Enabling framework provided to update current catalog of energy efficient appliances available to the public sector through their purchase platforms	Level of delivery: Fully delivered The homologation of all datasheets in Costa Rica's public-sector procurement platform (SICOP) for compliance with the guideline for efficient products (Executive Mandate 011-MINAE (2014)) was carried out by ICE–RACSA. The required trainings included in the workplan were delivered by the project team, MINAE, and U4E. The concept of a "framework agreement" refers to high-value procurement processes, which are not applicable in this case. However, the intended objective was achieved through a process of standardizing technical specifications for equipment under the scope of EM 11-MINAE, using standardized "datasheets" that contain the minimum product descriptions required in the platform. This activity was carried out by the Treasury Ministry and MINAE. ICE and MINAE report having established a working group together with SICOP, which operates on an ongoing basis to keep the catalog updated[23]	MINAE's reports of related activities Interviews with project team, MINAE and ICE.
Output 2.3: Training delivered to (A) procurement and environmental management officials from highest energy consuming public institutions; (B) efficient appliances and energy efficiency service providers; and (C) technical public officials	Level of delivery: Fully delivered There is evidence of training delivered to selected groups related to procurement and environmental management in the public sector, as well as to ESCOs, appliance providers, and technical public officials. Although training activities are documented from 2018 onward, most sessions were conducted in 2021, led by DIGECA (MINAE) with support from the Treasury, ICE–RACSA, and SICOP representatives. Beneficiaries included several commercial banks, municipalities, ING, CCSS, INAMU, the Ministry of Health, among others. Training attendance records show participation by more than 250 individuals across both in-person and virtual sessions.	Training activity presentations Lists of participants attending the training sessions.

[23] Named "Catalogue Committee of the SICOP Public Procurement System"

	Narrative Assessment *Discuss the nature and scale of outputs delivered, as well timeliness, quality, and utility to intended beneficiaries*	**Sources of Information/Evidence** *List specific sources of information for each output and its indicator/s and mention triangulation efforts*
Output 2.4: Online platform launched to centralize information resources relevant for procurement of efficient appliances and energy efficiency services	Level of delivery: Fully delivered In 2018, the use of SICOP became mandatory for the entire public sector, replacing the two separate platforms and multiple physical procedures that had been used previously, in accordance with the Regulation for the Use of the Integrated Public Procurement System 'SICOP' (Decree No. 41438-H). Within this framework, a process was carried out to standardize technical specifications for equipment covered under Directive No. 11-MINAE, using the concept of standardized 'datasheets'.	Decree No. 41438-H Progress report by MINAE on assigned activities (Letter DE-0144-2022)
Output 3.1B: Regulations which overcome barriers to procurement of public building energy efficiency appliances and services, for adoption by MINAE, Treasury and other key actors	Level of delivery: Fully delivered The update of MINAE's Executive Directive No. 11 was submitted to the Presidency on 28 July 2025 and entered into force upon its publication in the Official Gazette on 6 November 2025, through Decree No. 45239	Official Gazette – 6 November 2025.
Output 3.2B: Development of operational manual for such procurement, based on evidence from demonstrations in public buildings	Level of delivery: Fully delivered In 2024, U4E, with BASE as the project implementer, developed the Operational Manual for the Procurement of Energy-Efficient Equipment in Public Buildings in Costa Rica. This activity was carried out with the technical support of CNFL. The manual encompasses all stages of project implementation—from identifying energy efficiency opportunities and selecting appropriate technologies, to monitoring and evaluating objectives. It also provides guidance on key administrative processes, including calls for proposals, procurement procedures, and contract management. The document is grounded in the practical experience of the participating institutions and incorporates the energy efficiency pilot cases implemented at Hospital Blanco Cervantes and PIMA	Operational Manual for the Procurement of Energy-Efficient Equipment in Public Buildings in Costa Rica – (Deliverable) Selection matrix for demonstration projects.

	Narrative Assessment *Discuss the nature and scale of outputs delivered, as well timeliness, quality, and utility to intended beneficiaries*	**Sources of Information/Evidence** *List specific sources of information for each output and its indicator/s and mention triangulation efforts*
Output 3.3B: Financial institutions, including Banco Nacional de Costa Rica and Banco de Costa Rica, and private sector service providers have access to financial tools and feasibility studies and enhanced capacity for financing energy efficiency appliances and services in public buildings	Level of delivery: Fully delivered During 2024, technical and financial analyses were conducted across the public and private sectors to identify energy efficiency opportunities, using an Excel-based calculation tool developed by the consulting firm Bettergy. The tool is open-access and includes an accompanying Operational Guide. The studies incorporated applied examples, identifying a set of measures and recommended applications by market segment. Particular emphasis was placed on the availability of local suppliers and technical expertise; although the lead consultant was based in Spain, the work was supported by local experts to ensure contextual relevance and accuracy. The findings were disseminated through outreach and training activities involving participants from the selected stakeholders groups.	Excel based tool Deliverables: Reports (3) for market segments, and Final Report from Bettergy.
Output 3.4B: Demonstration projects implemented to showcase energy efficiency in the public sector	Output added in reconstructed ToC (See Inception Report) Level of delivery: Fully delivered Three projects were implemented, using the technologies covered in the project scope. Lighting system at "Hospital Blanco Cervantes": This project involves the retrofitting of 1,094 light fixtures in the hospitalization buildings and the Integrated General Ambulatory Services (SIGA) building. Air conditioning system at "Hospital Blanco Cervantes": This project consists of replacing existing air conditioning units with more efficient equipment. Replacement of NH_3 compressor at PIMA: This project involves replacing the refrigeration system compressor with a screw-type compressor that offers greater durability and efficiency	Project Implementation reports Field visits at beneficiaries Institutional video links in youtube
Output 4.1: Diagnosis about current processing capacity to provide environmentally-sound end-of-life integrated management of disposed appliances	Level of delivery: Fully delivered The diagnosis was concluded in December 2021. Training sessions for actors of most of public institutions (representatives from all the Public Institutions with an IEMP) making an extended analysis of the current situation in Costa Rica. U4E expert Ignacio Duque prepared a detailed report including a diagnosis of processing capacities (Chapter 7), updating previous reports on the matter.	Ignacio Duque report, prepared for U4E: "Considerations regarding Costa Rica's legal and operational framework for the collection and recycling of electrical and electronic equipment". Acceptance letter issued by the Ministry of Health

	Narrative Assessment *Discuss the nature and scale of outputs delivered, as well timeliness, quality, and utility to intended beneficiaries*	**Sources of Information/Evidence** *List specific sources of information for each output and its indicator/s and mention triangulation efforts*
Output 4.2: New equipment operating to recover disposed refrigerant gas and mercury (contained in disposed conventional appliances) to be later destroyed	Level of delivery: Fully delivered Based on the processing capacity assessments described in Section 4.1, the existing gaps and the need to incorporate new capabilities into the market were identified. These gaps informed the equipment volumes referenced in the Output. The equipment was procured by the project and subsequently donated to the institutions responsible for their operation (CNFL and Green Costa Rica). In the case of the lamp-crushing equipment, the project purchased a bulb-eater machine with a processing capacity of 54,000 tubes per month, significantly exceeding the original target. For refrigerant gas recovery in refrigerators and air-conditioning units, the capacity acquired by the project was lower than planned (1,090 lb instead of 3,000 lb), and the "several times use" noted by the PM is not considered sufficient to justify this shortfall. However, it was confirmed that CNFL had already been relying on third-party service providers with adequate capacity, which contributes to achieving the related outcome	Equipment handover certificates to beneficiaries Field visit to CNFL Photographic record of the delivered and installed equipment Interview with Beirute – disposed refrigerant gas equipment provider-
Output 4.3: Methodology developed to establish recovery targets for replaced conventional lighting, air conditioning and refrigeration appliances in accordance to Executive Mandate 38272-S Articles 9 and 10	Level of delivery: Fully delivered In his report prepared for U4E, Ignacio Duque includes in Chapter 8 the methodology for establishing recovery targets, which are to be achieved through compliance units. The approach is based on lessons learned from systems with established experience, such as those in the European Union. The chapter also provides recommendations for setting collection targets in alignment with Executive Mandate 38272-S. Delivery with methodology was approved by the Ministry of Health in 2022.	Ignacio Duque report, prepared for U4E: "Considerations regarding Costa Rica's legal and operational framework for the collection and recycling of electrical and electronic equipment". Acceptance letter issued by the Ministry of Health
Output 4.4: Enabling framework provided for environmentally sound end-of-life integrated management services (i.e. from lighting, air conditioning and refrigeration) available in purchase platforms used by the public sector	Level of delivery: Fully delivered There is evidence provided by MINAE indicating that the issuance of the new framework agreement for the end-of-life integrated waste management of lighting, refrigeration, and air-conditioning appliances—intended for adoption within the public sector procurement platforms (Activity 4.4.1)—has been completed.	Progress report by MINAE on assigned activities (Letter DE-0144-2022)

	Narrative Assessment *Discuss the nature and scale of outputs delivered, as well timeliness, quality, and utility to intended beneficiaries*	**Sources of Information/Evidence** *List specific sources of information for each output and its indicator/s and mention triangulation efforts*
Output 4.5: Training delivered to (D) waste compliance units, authorized waste handlers and suppliers; (E) procurement and environmental management officials from highest energy consuming public institutions; and (F) technical public officials	Level of delivery: Fully delivered Training was delivered for: (D) waste compliance units, authorized waste handlers, and suppliers; and (E) procurement and environmental management officials from the highest energy-consuming public institutions. The workshop materials—conducted by U4E expert Ignacio Duque in March 2022—were provided, along with a list of participants. The training to be delivered by Ambilamp (F) was suspended, as agreed with the PSC #5 in December 2022, and was replaced by energy efficiency training and informational videos. A list of videos produced is available, as well as evidence of delivered training.	Presentations based on full report, prepared for U4E Lists of participants attending the training sessions
Output 4.6: Information and dissemination actions carried out to promote environmentally sound end-of-life integrated management of special waste (from lighting, air conditioning and refrigeration appliances)	Level of delivery: Fully delivered The project carried out a sufficient set of actions to promote integrated environmental management of end-of-life products. Although the depth of these actions was limited, it is worth noting the development of a Communication Strategy as an important starting point for planning subsequent activities. Key outputs include: (i) the development of a brand book, (ii) a digital brochure summarizing the main information, and (iii) the publication of project-related content on the web, Yammer, and LinkedIn. However, the delivered products were limited, and their reach is not fully aligned with the allocated budget. At the time of the Terminal Review, the project section of CABEI's website was not available, and the information hosted on MINAE's website was difficult to access; even after locating the relevant section, the filenames did not follow a logical sequence by component and did not clearly indicate their content.	Communication Strategy Report Institutional video links in YouTube Public access to websites

98. The project achieved an overall *Highly Satisfactory* level of delivery, fully completing the majority of the outputs, with a single exception. It is important to highlight that during implementation it became evident that Component 3 could not be executed as originally designed, requiring a reformulation and the corresponding adjustment of activities and outputs.

99. Under this revised framework, the level of output delivery was high: out of a total of 16 outputs, 15 were assessed as *Fully Delivered* and 1 as *Partially Delivered*, This conclusion differs from that reported by the Executing Agency, which rated all 16 outputs as *Fully Delivered* in the 2025 PIR and the Final Project Report.

100. The output considered by the reviewer as *Partially Delivered* is justified in the preceding table and correspond to: "*1.2 – Tracking instruments developed for efficient appliance procurement by public institutions*".

Achievement of Project Outcomes

101. For the assessment of the Outcomes, all approved project updates and revisions were integrated into the Results Framework, including the full reformulation of Component 3. Outcome 3.2, introduced during the revision of the Theory of Change, was also incorporated to reinforce the causal pathways toward the long-term objectives.

102. In several cases, the performance indicators were not fully aligned with the intended scope of the respective Outcome. Therefore, a more in-depth and conceptually grounded assessment of Outcome achievement was undertaken. Consequently, in certain instances—such as Outcome 4—although one of the indicator targets was not met, the intended purpose of the Outcome is deemed to have been fully achieved.

Table 14: Achievement of project outcomes

Outcome 1:	**Strategic sites from public institutions with the highest energy consumption showcase opportunities to replace of conventional appliances with energy efficient appliances**
Performance Indicator(s) and Target(s):	**Indicator**: # of buildings retrofitted following the recommendations of the diagnoses **Target**: At least 3 buildings **Value at end-of-project**: 3
Sources of Information /Evidence:	Evaluation and Demonstrative project's reports Field visit observation and interviews with beneficiaries and ESCOs(Mission report includes reviewer photographic record)
Narrative Assessment:	The indicator was achieved, with three projects implemented in different locations for two beneficiaries: Hospital Blanco Cervantes (lighting and air conditioning) and PIMA (refrigeration system), derived from 20 energy diagnoses carried out during 2023. It should be noted that the indicator is not fully aligned with Outcome 1, as this component focused on conducting energy diagnostics for the main electricity consumers and developing the tracking tool. The indicator went beyond this scope by including the implementation of projects based on diagnostic recommendations—an aspect that was incorporated into the (updated) Outputs of Component 3. The Outcome is considered achieved, as the energy audits were carried out and identified opportunities in energy efficiency that are representative of high-consumption sectors. Finally, although a tool for evaluation and reporting was envisaged for showcasing purposes, it was not left operational for public institutions and requires further adjustments for completion.
Level of Achievement:	Fully achieved

Outcome 2:	**Suppliers provide the public sector with electric appliances that comply with required energy efficiency specifications (lighting, air conditioners and refrigerators) and energy efficiency services.**
Performance Indicator(s) and Target(s):	**Indicator**: # of appliance suppliers registered in the Electronic Catalog **Target**: At least 5 suppliers per appliance type **Value at end-of-project**:
Sources of Information /Evidence:	Interviews and deliverables reports, based on market surveys
Narrative Assessment:	The indicator was achieved, with a total of 67 suppliers providing efficient equipment and services (ESCOs), and more than five suppliers for each type of appliance. Conceptually, the number achieved is sufficient to ensure the existence of a competitive market, enabling the availability of such equipment in terms of both supply and pricing. The key factor underlying this result is the consolidation of updated energy-efficiency testing standards, the testing of equipment to demonstrate compliance, and the refinement of public procurement catalogs (SICOP), which exclude inefficient equipment in accordance with Executive Mandate 11-MINAE.
Level of Achievement:	Fully achieved

Outcome 2B:	**Key officials in public sector trained to propose or conduct energy audits, identify opportunities and benefits and procure efficient appliances.**
Performance Indicator(s) and Target(s):	No indicator and Target set, as the Outcome was proposed as part of the ToC review.
Sources of Information /Evidence:	Interviews with beneficiaries and training reports
Narrative Assessment:	This Outcome was proposed to strengthen the Theory of Change, recognizing that it was complementary to Outcome 2 and had not been originally included. Training at all levels to understand the scope of energy efficiency in public procurement, as well as its operational implementation within the SICOP platform, was successfully achieved.
Level of Achievement:	Fully achieved

Outcome 3A:	**Regulation, financial tools and empirically based guidelines are in place for the financing of procurement of efficient appliances that ensures sustainability of large-scale replacement programs**
Performance Indicator(s) and Target(s):	**Indicator**: Regulation adopted by the Costa Rica government for facilitating the replacement and procurement of -energy efficient appliances in public sector buildings **Target**:1 **Value at end-of-project**: 1 **Indicator**: Amount of Direct energy savings **Target**:16,117,915 GJ (by 2035) **Value at end-of-project**: 16,206,217 GJ (by 2035)
Sources of Information /Evidence:	Project reports/deliverables
Narrative Assessment:	Outcome 3 was completely reformulated, as it originally had a broader scope that included the creation of a Revolving Loan Fund (RLF) to enable the scaling up of energy-efficiency project implementation. The first indicator was partially achieved. There is evidence of practice-based Guidelines and the preparation and adoption of regulatory proposals by the Government during November 2025. The regulation referenced in the Output section was the update of Executive Mandate No. 11-MINAE, although it is debatable to what extent this update ensures the sustainability of large-scale replacement programs. The financial mechanisms were not developed into viable instruments to support the large-scale adoption of energy-efficiency projects Inputs from the procurement process for implementing the demonstration projects were also taken into account in the Guidelines and recommendations. Regarding the indicator and energy-savings targets, the values were recalculated by U4E/BASE, providing consistent figures that allow the target to be met.
Level of Achievement:	Partially achieved

Outcome 4:	**Authorized waste handlers offer their services for environmentally sound end-of-life integrated management of lighting, refrigeration and air conditioning appliances**
Performance Indicator(s) and Target(s):	**Indicator**:# of fluorescent tubes from which mercury can be recovered **Target**: At least 18,000 fluorescent tubes (by the end of the project) **Value at end-of-project**: 54,000 per month. **Indicator**: Storage capacity to recover refrigerant gas from replaced appliances **Target**:9,000 lb (Baseline 6,000 lb) **Value at end-of-project**: 7,090 lb
Sources of Information /Evidence:	Field visit and interviews with beneficiaries (photo records are available in Mission report)
Narrative Assessment: *Discuss the nature, depth, and scale of Outcome. Discuss the contribution, credible association, or attribution of the Outcome level change to the project.*	Strictly speaking, the indicator was not fully achieved. For the mercury recovery equipment, the target capacity was met; however, for the refrigerant gas storage equipment, only 1,090 lb were acquired compared to the target of 3,000 lb. The explanation provided in the monitoring documents (PIR) is that the equipment can be used repeatedly to reach the 3,000 lb target, but this justification could apply to any operational equipment capacity and is therefore not deemed sufficient by the reviewer. Nevertheless, field visits and stakeholder interviews confirmed that adequate market capacity exists for the processing of mercury and refrigerant gases, provided by third-party operators. Regarding fluorescent tubes, at the time the equipment was procured, CNFL already had access to these services through various authorized waste handlers. On this basis, Outcome 4 is considered achieved, with a significant contribution from the project.
Level of Achievement:	Fully achieved

Provide up to 3 summary paragraphs.

103. The project managed to achieve the Outcomes to a reasonable extent, meeting the established targets in most cases. The project succeeded in establishing a solid foundation for improving energy efficiency in the public sector, beginning with the consolidation of a catalog of energy-efficient appliances within the public procurement platform (SICOP), ensuring minimum performance levels for government purchases. In addition, the lists of ESCOs offering audit and project-management services were updated, and enabling frameworks were introduced for the environmentally sound management of end-of-life products.

104. Furthermore, the project carried out energy audits of the highest-consuming public-sector sites and assessed the most promising project opportunities through a dedicated guideline, subsequently implementing measures in three categories of appliances as demonstration cases of the associated benefits.

105. The area in which the Outcomes were not achieved relates to the availability of funding for energy-efficiency projects. It was not possible to establish the Revolving Loan Fund (RLF) due to legal and regulatory constraints that required lengthy approval and oversight processes. As an alternative, Component 3 was reformulated to include recommendations for adjusting the regulatory framework and financing tools; however, there is no evidence that these have been implemented or that they have meaningfully improved the current situation of public institutions in accessing funds for their projects.

Likelihood of Impact

106. The main factors considered in the Theory of Change at review are analyzed, including the elements that were incorporated or modified in relation to the design stage.

Table 15: Likelihood of impact

Factors influencing likelihood of impact	Assessment	Justification
Drivers to support transition from Outputs to the Project Outcomes The project benefits from The U4E Center of Excellence's expertise through targeted technical support The project benefits from existing capacities in the waste treatment sector regarding selected appliances	In place	The participation of U4E was fundamental to the project. On one hand, through the activities planned during the design phase, U4E contributed by engaging partners and consultants who brought valuable sector experience, particularly in waste-management topics. On the other hand, following the redesign of Component 3, U4E—together with implementing partners such as BASE—assumed responsibility for the main activities, which included not only the provision of technical assistance but also the procurement of equipment for the pilot projects and its implementation. Regarding waste-management actors, the participation of Fortech and other authorized handlers—including CNFL—was particularly noteworthy. Their prior experience and operational capacity served as a cornerstone for strengthening waste-management capabilities under the project.
Assumptions for the change process from Outputs to Project Outcomes Norms, testing capacities & labeling for efficient appliances created	Hold	This assumption holds and has been one of the key pillars enabling the validation of the products incorporated into SICOP's efficient equipment catalogue. In addition to the relevant regulations—some of which were developed within the framework of the project—the testing capacity of ICE's LEE laboratory for appliance verification was confirmed
Proportion of **Project Outcomes** fully or partially achieved	All	3 Fully achieved, 1 Partially Achieved.
Drivers to support transition from Project Outcomes to Intermediate States Support from Manuals, Guidelines and continuous training available from Treasury and MINAE to public officers The project benefits from CABEI's expertise in design and operation of innovative financial mechanisms Dissemination of Public Sector showcase impacts other sectors: Residential, Industry, Commerce	Partially in place	Continuous training and support for the SICOP platform and its operating staff were confirmed by MINAE. A working group composed of SICOP, the Treasury, and MINAE continues to follow up on actions required to update the efficient equipment catalogue. Interviews also highlighted the ongoing nature of this training, which is mainly provided through the Treasury. Costa Rica's regulatory framework for public procurement and financing—and the lack of an in-depth assessment by UNEP and MINAE at the design stage—prevented the establishment of the Revolving Loan Fund during implementation, thereby limiting the capitalization of CABEI's experience in the design and operation of financing instruments.. With respect to broader sectoral impact, this remains limited due to the modest scale-up of the demonstration projects within the public sector.

Factors influencing likelihood of impact	Assessment	Justification
Assumptions for the change process from the Project Outcomes to Intermediate States Interest and willingness of high-level authorities in public institutions to develop capacities for diagnosing, implement and monitoring energy efficiency opportunities Public procurement platform is integrated and framework agreements are adopted to acquire efficient appliances Key actors adopt regulations that overcome barriers for public procurement	Partially hold	The interest and commitment of the authorities still appear to be at an early stage, as the PGAIs continue to maintain a predominantly environmental focus, and reporting on energy-related aspects remains pending. The SICOP public procurement platform has been successfully implemented, consolidating existing management channels. In addition, the catalogues have been updated and are supported by a review mechanism to ensure their continued relevance and accuracy. Finally, there is no evidence that adopted regulations overcome the barriers affecting public procurement, particularly those needed to enable large-scale investment.
Proportion of **Intermediate States** achieved Successful procurement of efficient appliances by the public sector Conventional obsolete appliances are replaced on a large scale in the public sector, considering an environmentally sound end-of-life integrated management.	Some	The first aspect has been achieved, ensuring the purchase of efficient appliances in the public sector through the implementation of an updated catalogue. In the case of large-scale replacement, limitations persist due to the absence of agile financial mechanisms that public institutions can access for energy-efficiency projects, particularly those requiring medium-term repayment schemes.

107. The factors influencing the project's likelihood of impact can be considered strong in the early stages of the causal pathways outlined in the Theory of Change. However, as one moves further along these pathways, it becomes evident that some drivers are only partially in place and certain assumptions do not hold, particularly those affecting scalability.

108. The need to strengthen institutional capacities for energy management within public institutions is once again highlighted, particularly by deepening compliance with the energy-related requirements of the PGAI, supported by a system for tracking actions and reporting within the Programme framework.

109. Closely related to this, robust financial instruments are required—ones that allow public institutions not only to procure efficient equipment (typically associated with smaller-scale projects) but also to support higher-impact initiatives that require larger investments.

Findings Statements on Effectiveness:

110. The project's effectiveness was assessed as satisfactory, with the main elements required to support efficient public-sector procurement processes established. However, further strengthening is needed in the areas that enable scaling up and ensuring the sustainability of the actions, as it was further detailed in every specific section for Outcomes, Outputs and Likelihood of Impact.

Rating for Effectiveness: Satisfactory

Rating for Availability of Outputs: Highly Satisfactory
Rating for Achievement of Project Outcomes: Satisfactory
Rating for Achievement of Likelihood of Impact (Use 'Likely' scale): Moderately Likely

E. Financial Management

Adherence to UNEP's Financial Policies and Procedures

111. The roles of financial reporting were defined in: (i) the Internal Cooperation Agreement (ICA) between UNEP and U4E, and (ii) the Project Cooperation Agreement (PCA) between UNEP and CEBAI, including the oversight by the UNEP as the IA, to ensure the adherence to UNEP's financial policies and procedures.

112. The documentation provided to the reviewer allows for a positive assessment of compliance with procurement and contracting procedures and policies, by using UNEP's templates and following IA approvals. Although some documents are still pending approval, this compliance was validated during the financial audit.

Completeness of Financial Information

113. The project's financial information is complete. The reviewer received the requested information in compliance with UNEP reporting formats and in accordance with the documents specified in Appendix 5 of the Project Supervision Plan.

Table 16: Financial management

Financial management components:		Rating	Evidence/ Comments
1. Adherence to UNEP's/GEF's policies and procedures:		**HS**	
Any evidence that indicates shortcomings in the project's adherence[24] to UNEP or donor policies, procedures or rules		No	
Was first disbursement carried out within 9 months of UNEP's project approval date.		Yes	22/12/2018, two months after UNEP's approval date.
Were the procurement policies of UNEP and the donor(s) followed? *(where applicable)*		Yes	
2. Completeness of project financial information[25]:			
Provision of key documents to the reviewer (based on the responses to A-H below)		**S**	
A.	Co-financing and Project Cost's tables at design (by budget lines)	Yes	Tables in Annex F-1, F-2 and U4E TA were provided, with a reconciliation between GEF budget and: UNEP budget lines, Co-financing
B.	Revisions to the budget	Yes	Revised budgets were prepared for each Project Revision
C.	All relevant project legal agreements (e.g. SSFA, PCA, ICA)	Yes	PCA, ICA and amendments
D.	Proof of fund transfers	Yes	Through Financial Audit Report
E.	Proof of co-financing (cash and in-kind)	Yes	Through the co-financing report and the supporting documentation provided by each contributor
F.	A summary report on the project's expenditures during the life of the project (by budget lines, project components and/or annual level)	Yes	
G.	Copies of any completed audits and management responses *(where applicable)*	Yes	Information is available, although Final Version is under approval.
H.	Procure documents[26], including the approved requisition document and Source Selection Plan*(where applicable)*	Yes. Partially	Partially. Procurement documents were presented for equipment and services in demonstration projects.
I.	Any other financial information that was required for this project (list):	N/A	
Overall rating		**S**	

Findings Statements on Financial Management

114. There is evidence that UNEP's financial policies and procedures were satisfactorily complied with, through the execution of agreements (ICA, PCA) with implementing partners, the submission of all documents agreed and stipulated under the Project Supervision Plan (Expenditure Reports, Half-Year Progress Reports, Inventory Reports, and the Financial Audit Report), and their validation through the Financial Audit.

115. Nonetheless, their submission timelines were longer than planned under the Project Supervision Plan. A significant contributing factor was the continuous turnover of personnel, including Project Managers on CABEI's side which required multiple capacity-building sessions by UNEP's finance team, as well as other focal points in UNEP and MINAE, leading to repeated rounds of document review and revision before the information could be completed satisfactorily.

Rating for Financial Management: Satisfactory

Rating for Adherence to UNEP's Financial Policies and Procedures: Highly Satisfactory

[24] If the evaluation raises concerns over adherence with policies or standard procedures, a recommendation maybe given to cover the topic in an upcoming audit, or similar financial oversight exercise.

[25] See also document 'Criterion Rating Description' for reference.

[26] Relevant for procurement action over USD 10,000 in value.

Rating for Completeness of Financial Information: Satisfactory

F. Efficiency

116. *Efficient use of existing institutional structures, studies, and prior initiatives*. The project was built upon existing institutional structures, with MINAE providing leadership in accordance with its assigned mandates, the Ministry of Health participating in the environmental component (Component 4), and the Treasury contributing to the public procurement components (Component 2). Likewise, coordination with other relevant counterparts—such as SICOP, INTECO for the approval of testing and management standards, and ICE–LEE as the testing laboratory—was maintained. On the UNEP side, collaboration with U4E continued to ensure specialized technical support, building on previous experiences from parent projects and incorporating private-sector actors as providers of goods and services. The situation with CABEI, as the main Executing Agency, is addressed in a later section.

117. *Use of existing data sources and prior technical information*. The project made use of previous studies and existing information, including the 2014 assessments of the highest energy-consuming public institutions, existing testing standards to identify gaps in the selected appliances, and the national capacities for managing refrigeration gases and mercury from lighting products. In this regard, project management efficiency was very high, as the intervention capitalized on existing institutional structures, built upon prior studies and data, and assigned tasks within these established frameworks.

118. *Compliance with implementation timelines*. In terms of timeliness, the project experienced significant delays, resulting in a total of 39 months of no-cost extensions beyond the original plan. The first source of delay was the slow project start-up after the beginning on 22/10/2018 with the PCA signature. Implementation began ten months later with the first Steering Committee Meeting on 14/08/2019. A second factor was the impact of the COVID-19 pandemic in early 2020, which brought the project to a virtual standstill due to the closure of public and private institutions, with operations resuming gradually over the course of the year.

119. Finally, the need to fully redesign Component 3 in 2022 required substantial additional effort. This redesign stemmed from issues not anticipated in the project design but had deep implications for efficiency, consuming resources and generating delays. Notwithstanding these challenges, the project demonstrated strong adaptive capacity, successfully redirecting funds toward new activities that maximized project results and reallocating execution roles and budgets to the most competent actors, ensuring the most efficient use of resources under the circumstances.

120. *Efficiency in management and use of resources*. CABEI was designated as the main Executing Agency, selected for its regional experience in managing energy-efficiency projects and for the project's intention to establish a financial mechanism under Component 3. Despite not having in-house technical staff in the energy/technology domain, CABEI adopted a strategy of targeted contracting to fulfill both Project Management and technical responsibilities. U4E, in turn, assumed responsibility for activities that leveraged its technical expertise and professional networks. Several challenges emerged due to the complexity of the operating context, including the COVID-19 pandemic and the reformulation of the financial component. The latter led to a project redesign and the redistribution of activities, during which limitations within CABEI regarding the procurement of goods for third parties emerged. These responsibilities—together with a portion of the GEF budget—were consequently transferred to U4E. .

121. Other factors also consumed time and resources, including the operational reality of having two Executing Agencies with limited coordination, and the substantial efforts required to consolidate information for the IA, SCM, and ongoing reporting needs. Added

to this was the continuous turnover of personnel from CABEI (a total of five Project Managers), UNEP and U4E, which repeatedly caused loss of continuity, disruption of working relationships, and delays associated with onboarding new staff.

122. *Measures to reduce UNEP's carbon footprint*. Project management and implementation methods considered efficiency measures that reduced UNEP's carbon footprint. The use of regional executing partners with local presence, the engagement of national technical experts, and the minimization of travel through virtual meetings—and when necessary, relying on local technical support—contributed to lowering the environmental impact of project operations.

Table 17: List of project extensions

#	Type of project extension (cost/ no-cost)	Duration (# months)	Project's end-date	Reason for no-cost extension
			22/10/2021	
1	No-cost	-	22/10/2021	Revised Budget and Workplan
2	No-cost	14	31/12/2022	Revised Budget and Workplan
3	No-cost	13	31/01/2024	Revised Logframe, Budget and Workplan
4	No-cost	12	31/01/2025	Revised Budget and Workplan
5	No-cost	-	31/01/2025	
		39		

Findings Statements on Efficiency:

123. Finding 1: Institutional Design and Execution Capacity. The project was built upon solid existing institutional structures; based on the designation of executing agencies with experience in energy project management, financial instruments, and regional technical expertise in areas such as tracking tools, waste management, and energy audits, among others. The redesign of Component 3 generated challenges in formulating new activities, outputs and outcomes, during which some rigidity on CABEI's part in procuring equipment for third parties became evident. These issues were resolved through Steering Committee agreements, which led to the reallocation of part of the budget and activities to U4E. The limited coordination between the two Executing Agencies and the repeated turnover of CABEI's Project Managers and focal points from U4E and UNEP, further weakened continuity and operational effectiveness.

124. Finding 2: Timeliness and Adaptive Management. The project experienced substantial delays, accumulating 39 months of no-cost extensions, driven by slow start-up, the COVID-19 pandemic, and the full redesign of Component 3 due to regulatory barriers hindering the establishment of the Revolving Loan Fund. Despite these setbacks, the project demonstrated strong adaptive management, reallocating resources and responsibilities to more capable actors and refocusing activities to maximize results under changing conditions. This adaptability mitigated part of the delays and contributed to achieving key Outcomes.

Rating for Efficiency: Moderately Satisfactory

G. Monitoring and Reporting

Monitoring of Project Implementation:

125. The monitoring design, workplan, and budget were detailed in the ProDoc and integrated into the overall project budget. The set of indicators and targets was prepared together with the means of verification, which—along with the deliverables—constitute the main elements for assessing progress in project implementation. M&E implementation is the responsibility of the Project Management Unit (PMU), with the Project Steering Committee periodically reviewing progress and recommending adjustments to the results framework or the M&E plan when needed. The UNEP Task Manager reviews the technical quality of outputs and ensures effective oversight throughout project implementation.

126. With regard to the Outcome indicators, they do not always comply with the SMART principle. For Outcome 1, the indicator does not demonstrate a causal relationship reflecting that the Outcome has been achieved. In the case of Outcome 3— which was reformulated—its indicator became overly vague, referring to the approval of a regulatory framework document that was expected to address the long-term sustainability of large-scale equipment replacement programs.

127. The planned monitoring mechanisms enabled the establishment of a coherent framework for tracking effective project implementation, consistent with UNEP guidelines, standards, and GEF policies. These included the Inception Workshop, HYPR, QR, PSC meetings, PIR, Terminal Report, co-finance reports, and audits, as listed in Annex G of the ProDoc.

Project Reporting

128. The main reports were completed, including SCM minutes, PIRs, and others, with a satisfactory level of information and analysis. The monitoring framework and submitted reports facilitated adaptive project management. For example, PSC meeting #5 (December 2022) identified the impossibility of achieving the Outcomes under Component 3, leading to a full reformulation of activities and budget in response to contextual changes. The revised Results Framework and the corresponding adjustments to monitoring activities are properly documented in the PSC minutes and subsequent Project Revisions.

129. However, following the 2022 project revision, monitoring and reporting became less consistent. Although PIRs, HYPRs, QRs, and other reports were submitted, nearly two years passed without a meeting of the Project Steering Committee (between PSC # 4 and #5). This gap may be explained by the effective transfer of implementation responsibilities from CABEI to U4E, which in practice resulted in other actors (primarily U4E and MINAE) assuming the follow-up of activities.

Findings Statements on Monitoring and Reporting

130. The monitoring mechanism was appropriately established, in line with UNEP and GEF guidelines and policies, and included a reasonably structured results framework, albeit with some areas for improvement. The planned review and reporting mechanisms were properly defined as part of an integrated workplan, incorporating UNEP's standard documentation and specifying the deliverables associated with each project component.

131. Most reports were submitted in a timely and adequate manner; however, Nevertheless, toward the end of implementation—and partly as a result of the redistribution of Component 3—some communication gaps emerged among the parties. Strategic discussions and reviews became less frequent, and the submission of unconsolidated reports by CABEI and U4E required additional efforts to compile and finalize reporting

from UNEP. In parallel, changes in key personnel at CABEI, U4E, and UNEP resulted in additional time needed for project handovers and adjustments to close the reporting cycle..

Rating for Monitoring and Reporting: Satisfactory

Rating for Monitoring of Project Implementation: Satisfactory
Rating for Project Reporting: Moderately Satisfactory

H. Sustainability

Socio-political Sustainability

132. The main positive factor to highlight is the alignment and collaborative work among stakeholders in building and strengthening partnerships throughout the project, which are highly likely to be maintained and contribute to long-term sustainability. Some political challenges emerged, including changes in key actors within MINAE between the design and implementation phases, affecting public-sector ownership of the project, and more notably the change in Government authorities. Although this did not alter the project's internal structure, it generated uncertainty regarding continued support for the sustainability pathways underpinning the project. This issue now appears to have been resolved, as the main stakeholders remained engaged, and the prioritization of energy-efficiency actions seems to have been reinforced, having persisted across two administrations from different political parties. Furthermore, the environmental focal point remains within MINAE, and key positions and individuals have largely remained within their institutions or the sector, despite some turnover.

Financial Sustainability

133. Within the framework of the project, the financing enabled the achievement of important results through the applied resources: (i) the preparation of energy-efficiency testing standards and the update of the SICOP platform; (ii) the implementation of energy audits for major public-sector energy consumers; (iii) the execution of demonstration projects; (iv) the development of case studies; and (v) the strengthening of waste-processing capacities for equipment replaced under the project—such as refrigeration units and lighting products.

134. However, the establishment of a revolving fund or similar financing mechanism to enable public-sector access to credit could not be implemented. The modification of Component 3 brought positive elements to advance the positioning and relevance of energy-efficiency projects—both for beneficiaries and for the financial sector—but barriers persist that limit public-sector access to financing, thereby hindering scaling-up. In principle, financing could come from private banks and multilateral institutions, given the level of interest demonstrated during the project; however, some contributions from the public sector may be required, such as a guarantee fund to secure repayment.

Institutional Sustainability

135. Institutional sustainability can be assessed at several levels. The foundation for an energy-efficient public sector lies in ensuring that public procurement adheres to minimum performance standards (MEPS). Sustainability in this regard rests with MINAE, which—through Executive Directive No. 11—establishes the MEPS that must be met, and there is institutional commitment to their enforcement and periodic updating. The updating and effective application of the public procurement catalog depends on the SICOP platform, which, together with MINAE and ICE, carried out the updates during project implementation. MINAE and ICE have expressed their continued support to SICOP

for maintaining the catalog up to date. Finally, the technical standards issued by INTECO ensure that equipment can be tested for energy-efficiency performance to validate compliance. Overall, this ecosystem is considered highly robust and provides sufficient guarantees for institutional sustainability.

136. At a broader level of adoption lies the energy management of the public sector, under the responsibility of MINAE and the Ministry of Health through Executive Decree 36499-S-MINAE-MS, which mandates the design and implementation of the PGAI. In this area, a gap remains to achieve the desired impact. Energy-related components of the PGAI need to be strengthened and full implementation of the systems must be advanced. Under Component 1 of the Project, the tracking tool was not fully refined and is not currently being used for PGAI reporting purposes. Although MINAE expressed willingness to move forward, financial resources are required to finalize software development and maintenance, as well as to support training, public-sector assistance, and implementation monitoring.

Findings Statements on Sustainability:

137. The project demonstrates moderate to high prospects for sustainability, supported by strong institutional frameworks—such as MEPS, updated procurement systems, and established technical standards—and reinforced by continued stakeholder engagement and political commitment across administrations.

138. However, long-term financial sustainability remains partially constrained due to the absence of an operational financing mechanism for public-sector investments; further progress will depend on strengthening PGAI implementation, completing key tools, and mobilizing complementary public and private financial instruments to enable scaling-up.

Rating for Likelihood of Sustainability (use 'Likely' scale): Moderately likely

(The overall rating for Sustainability is the lowest rating among the three sub-categories)

Rating for Socio-political Sustainability: Highly likely

Rating for Financial Sustainability: Moderately likely

Rating for Institutional Sustainability: Likely

I. Factors Affecting Performance and Cross-Cutting Issues

Quality of Project Management and Supervision

139. CABEI made significant efforts to support the project and achieve its intended objectives, which were ultimately met despite the challenges encountered during implementation. U4E, for its part, demonstrated a very high level of engagement—fulfilling its original commitments and subsequently assuming additional activities resulting from the redesign of the financial component under Component 3. Staff changes did not prevent the achievement of results; however, they did affect project management and oversight, as internal handovers within institutions and induction processes for reporting and communication between parties were required..

Stakeholders Participation and Cooperation

140. Stakeholder participation and cooperation were highly satisfactory, with several institutions demonstrating a high level of engagement. From MINAE, the project focal point, strong leadership was evident through the Directorate of Energy and DIGECA, both in management and oversight as well as in implementation. Their involvement in concrete activities—such as the amendment of Executive Mandate No. 11-MINAE, the update of the SICOP catalog, and the delivery of training—substantiated the co-financing commitments made at the design stage. U4E played a decisive role in the project's

success, assuming activities not foreseen during design and mobilizing international expertise—such as the preparation of operational manuals, bid evaluations, and procurement for demonstration projects via BASE.

141. Other stakeholders played less prominent but still important roles consistent with their commitments, such as INTECO in developing technical standards, ICE in updating SICOP catalogues and supporting by the LEE, and CNFL in managing end-of-life lighting products. Special mention is warranted for actors who demonstrated exceptionally strong commitment to implementation: (i) the beneficiaries of the demonstration projects—PIMA and Hospital Blanco Cervantes—who actively supported project execution and are now pursuing follow-up actions to scale the benefits; and (ii) the consultants and technical teams, including Bettergy, CIRE, and Beirute, who showed strong interest in the project and in continuing work to advance energy efficiency in the public sector. From a financial perspective, it is difficult to assess the role of the local banking sector, which participated in training activities for project evaluation but was not able to engage with the RLF, given that it could not be operationalized. Finally, at the public-sector level, the Treasury participated appropriately in activities related to public procurement and the PGAI. With regard to consultations on the RLF, its involvement was channeled through the General Comptroller's Office and Public Credit Directorate, although with somewhat lengthy response times and unconclusive replies that led to the redesign of the Component 3. Likewise, no strong participation from the Ministry of Health was observed, and the regulatory updates proposed under the project remain pending.

Responsiveness to Human Rights and Gender Equality

142. The project did not conduct a gender analysis during the preparation phase, nor did it incorporate a gender-responsive results framework or sex-disaggregated indicators. Nonetheless, certain guidelines were outlined for the implementation of activities across components, emphasizing non-discrimination in training sessions and outreach materials, promoting gender-balanced participation in workshop invitations, and disaggregating information by sex. The absence of specific planned directives and gender-sensitive indicators limited the project's impact in this area.

143. During implementation, efforts were observed to promote the employment of women in leadership positions (three out of five PMs at CABEI) and to ensure balanced participation of women in training activities, as evidenced in the sessions conducted by Bettergy and INTECO. However, in the reviewer's assessment, additional actions could have been incorporated into dissemination and awareness-raising efforts, particularly in a sector—energy and industry—that is traditionally male-dominated. The communication strategy under Component 4 does not reference gender or women's participation. Common actions in comparable industry/energy projects include: (i) integrating gender-equality messaging in awareness campaigns on energy efficiency, highlighting women as agents of change—such as public officials, engineers, auditors, or decision-makers—to challenge stereotypes and promote equal participation; and (ii) documenting and disseminating case studies of women-led initiatives in the public energy sector, contributing to UNEP's broader knowledge-management and gender-equality objectives.

Environmental and Social Safeguards

144. The project carried out an appropriate Environmental and Social Safeguards (ESS) screening during the design stage (Annex N of the ProDoc), identifying the main risk as the improper management of hazardous waste resulting from equipment replacement. The assessment included mitigation strategies based on ensuring waste-management capacities through authorized handlers and establishing a framework agreement within the public procurement system to enable public institutions to contract qualified

companies. With the redesign of Component 3, funds were redirected toward the implementation of demonstration projects, but no activity was included for monitoring the disposal of hazardous waste.

145. Monitoring was reasonably based on the execution of activities such as the procurement of equipment and its donation to authorized waste handlers, as well as the establishment of the framework agreement within SICOP; however, following the change in Component 3, no validation element was added to ensure that the system was functioning and that the appliances were properly managed by PIMA and Hospital Blanco Cervantes.

Country Ownership and Driven-ness

146. As established in earlier sections of this report, there was significant government ownership primarily through MINAE, as well as support from other public institutions such as INTECO, ICE, and SICOP. These elements helped lay the foundation for an energy-efficient public procurement system. In environmental matters, the Ministry of Health did not demonstrate the same level of ownership; however, DIGECA's involvement enabled the authorization and establishment of an appropriate framework.

147. Deeper government ownership of the actions driving change and impact in public-sector energy efficiency remains pending, particularly with regard to the involvement of the Treasury. Joint leadership between the Treasury and MINAE is needed to ensure effective implementation of the PGAI and to promote functional, targeted financing instruments.

Communication and Public Awareness

148. Communication was part of Component 4 of the project, which established a communication strategy and basic actions supported by a communication plan of limited depth and the development of brand guidelines. Customary activities were proposed, including dedicated spaces on institutional websites to disseminate the project and its main results—although some of these, such as those hosted by CABEI, are no longer available—as well as social media communications. Audiovisual materials were also produced to promote energy-efficiency actions and showcase the implementation of the demonstration projects. Communication and outreach tools are presented in Annex VII.

149. Communication and public-awareness activities can be considered adequate. However, in the reviewer's assessment, opportunities existed to adopt a more holistic communication approach and to make available tools that would enable post-project follow-up rather than focusing solely on isolated activities. One such proposal is to publish publicly accessible information on institutional energy consumption and targets, as a means to encourage public scrutiny and motivate institutions to implement their environmental management plans.

Findings Statements on Factors Affecting Performance and Cross-Cutting Issues:

150. Project management was carried out in a reasonably satisfactory manner, ensuring continuity despite the challenges that arose during implementation. The redesign of the financial instrument component highlighted CABEI's limitations in undertaking procurement and asset purchases on behalf of third parties; this was resolved through agreement among the parties by reallocating these responsibilities to U4E. In addition, changes in key personnel at CABEI, U4E, and UNEP affected the efficiency of project execution and supervision, although they did not ultimately prevent the achievement of results..

151. Stakeholder engagement contributed to implementation but played a more supporting role relative to the central coordination by MINAE, UNEP, and U4E. While institutions such

as INTECO, ICE and others fulfilled specific commitments, broader inter-institutional alignment—especially from the Treasury and the Ministry of Health—remained limited, affecting progress on regulatory and financial instruments.

152. Communication and public-awareness activities were delivered as planned, producing materials and online visibility, although opportunities were missed to adopt a more comprehensive strategy that could enable post-project follow-up and strengthen institutional accountability.

153. Gender and safeguards considerations were incorporated to a modest degree. Although the project lacked a gender analysis and did not include gender-responsive indicators, efforts were made to encourage women's participation in leadership and training activities. Environmental and social risks were correctly identified, but monitoring gaps emerged following the redesign of Component 3, limiting verification of proper waste-management practices.

Rating for Factors Affecting Performance and Cross-Cutting Issues: Moderately Satisfactory

Rating for Quality of Project Management and Supervision: Satisfactory

Rating for Stakeholders Participation and Cooperation: Highly Satisfactory

Rating for Responsiveness to Human Rights and Gender Equality: Moderately Unsatisfactory

Rating for Environmental and Social Safeguards: Satisfactory

Rating for Country Ownership and Driven-ness: Moderately Satisfactory

Rating for Communication and Public Awareness: Moderately Satisfactory

V. Conclusions and Recommendations

A. Conclusions

Overall, the project performed at a satisfactory level, demonstrating strong relevance, significant technical achievements, and clear progress toward strengthening Costa Rica's enabling environment for energy-efficient public procurement. The project's strongest performing aspects were its capacity to update and institutionalize energy-efficiency criteria within the public procurement system (SICOP), the successful delivery of high-quality energy audits across major public institutions, and the implementation of relevant demonstration projects that validated the feasibility of efficiency measures in real operational settings (Output 1.1–3.4B). These achievements were underpinned by consistent cooperation among MINAE, UNEP, and U4E, which collectively compensated for weaknesses in the Executing Agency and allowed activities to move forward despite structural constraints. The project also contributed significantly to national capacity through extensive training efforts, the development of standards, and the dissemination of tools that strengthen long-term institutional competencies.

The project's most notable achievement is the modernization of public procurement's catalog allowing only energy-efficiency appliances, achieved through joint technical work between ICE, INTECO, MINAE and the SICOP committee. This reform ensures that efficient appliances are systematically prioritized in public purchases, creating a durable impact that extends beyond the project's duration. The results are reinforced by the establishment of a permanent working group responsible for maintaining and updating the catalogue, which strengthens the sustainability of this outcome (Institutional context; Output 2.2). Another major accomplishment was the set of 20 energy audits, which not only identified savings opportunities but also raised awareness among public institutions about the importance of

structured energy management—an area previously underdeveloped across the sector. The demonstration projects at Hospital Blanco Cervantes, PIMA and the national refrigeration system further showcased the financial and operational value of energy-efficiency investments, generating evidence that now informs guidelines and operational manuals developed under Component 3 (Output 3.2B–3.4B).

These achievements were brought about largely by the adaptive and collaborative management between MINAE, UNEP, U4E and technical partners, particularly after Component 3 required a full redesign. U4E's expanded execution role, combined with BASE's technical support, ensured continuity and precision in procurement, feasibility analysis and implementation (see paragraphs 108- 110). This adaptive capacity was essential in navigating regulatory and institutional limitations that had not been fully anticipated at design stage, especially regarding financing restrictions affecting public institutions' ability to contract long-term debt (see paragraph 44). The project demonstrated a scalable approach through the integration of evidence-based tools, the consolidation of technical norms, and the creation of procurement guidelines that are now applicable to all public institutions, laying the groundwork for broader market transformation.

Comparative weaknesses were apparent in areas related to financial mechanism design and the effective uptake of certain tools developed by the project (e.g., the tracking instrument under Output 1.2). The Revolving Loan Fund could not be operationalized due to legal and regulatory barriers that were underestimated at design stage by UNEP and MINAE, ultimately requiring a complete reformulation of Component 3 (see Chapter IV.D Effectiveness). During the redesign of Component 3, CABEI encountered constraints in procuring goods for third parties within the public sector, needing the reassignment of certain activities to U4E. Turnover in key personnel, including Project Managers at CABEI and focal points at UNEP and U4E, reduced the ability to fulfill execution responsibilities efficiently. CABEI and U4E showed goodwill and completed the activities within its remit, though structural issues planned at the design stage restricted the project's overall effectiveness and contributed to delays, including those resulting from the COVID-19 pandemic (see paragraph 82). Additionally, while the tracking tool was technically completed, its practical adoption by public institutions remains limited due to insufficient tailoring to user needs and the absence of a corresponding integration mechanism into the PGAI reporting system.

The project's contribution to capacity building is substantial: more than 250 officials and private-sector actors received training on procurement, environmental management, energy audits and efficiency standards (Output 2.3). These efforts increased the technical readiness of public officers and suppliers to comply with efficiency mandates and participate in future efficiency programmes. The gender dimension, although not explicitly embedded in project design, was indirectly addressed through inclusive participation in training and outreach, and through the project's alignment with PGAI—which requires equal opportunities and representation in institutional sustainability actions. No unintended negative effects were identified. Environmental safeguards were adequately managed, and the end-of-life management actions under Component 4 did not create adverse impacts despite the limited added value of the donated equipment.

The sustainability of the project is rated at a Moderately Likely level. Key factors supporting sustainability include the ongoing institutional mechanisms for updating SICOP catalogs, the availability of technical guidelines for procurement and audits, and the strengthened regulatory and capacity environment. However, long-term sustainability will depend on consolidating institutional energy management functions across the public sector, addressing persistent financial barriers for investment, and ensuring clearer mandates for Treasury and MINAE in driving efficiency requirements (see paragraphs 136-137). The absence of a functional financing mechanism remains a structural barrier to large-scale replacement programmes, although the project has laid the analytical and methodological foundation for future solutions.

Overall, the project contributes meaningfully to Costa Rica's broader energy-efficiency agenda and to UNEP's global body of work on market transformation for efficient appliances. As a child project of the U4E Programme, it demonstrates how global methodologies can be effectively adapted to national contexts, generating practical instruments, institutional reforms, and evidence that can be replicated in other countries facing similar public-sector constraints.

Responses to Key Strategic Questions

The review Terms of Reference included a set of strategic question of interest to UNEP, which are presented below together with the corresponding responses:

a. To what extent has the project influenced Costa Rica's national policies, procurement practices, and institutional capacities to ensure that energy-efficient appliances and end-of-life management become standard in public institutions beyond the project's lifetime?

Response: The project has made a substantial contribution to public procurement by supporting the adoption of technical standards, strengthening testing capacities, and updating SICOP catalogues, thereby ensuring the procurement of energy-efficient equipment. The project also strengthened institutional linkages and capacities through energy audits, demonstration projects, and targeted training for technical staff and decision-makers involved in procurement and sustainable management. At the level of national policies, however, adjustments have not been decisive, and constraints remain that hinder the scaling-up of energy-efficiency actions, including limited available budgets and borrowing capacity, the absence of effective financial instruments, and the need to further strengthen energy-management systems.

b. What is the likelihood that the direct and indirect GHG emission reductions, energy savings, and waste management practices achieved by the project will be sustained, scaled up, and contribute meaningfully to Costa Rica's decarbonization pathway?

Response: The likelihood that the project's direct and indirect GHG emission reductions, energy savings, and improved waste-management practices will be sustained and contribute to Costa Rica's decarbonization pathway is moderate. The project has successfully established strong enabling conditions in the early stages of the causal pathways defined in the Theory of Change, particularly through strengthened public procurement rules, demonstration projects, and improved environmental management practices. However, as these pathways extend toward scaling and long-term impact, several drivers remain only partially in place and key assumptions—especially those related to financing and institutional capacity—do not fully hold. Sustained and scaled impact will depend on strengthening energy-management capacities within public institutions, including deeper compliance with energy-related PGAI requirements supported by effective tracking and reporting systems. In parallel, the availability of robust and legally viable financial instruments capable of supporting larger-scale investments will be critical to move beyond incremental equipment replacement and enable higher-impact energy-efficiency projects aligned with Costa Rica's decarbonization objectives.

c. What changes were made to adapt to the effects of COVID-19 and how did any changes affect the project's performance?

Response: The COVID-19 pandemic had a significant impact on project implementation, primarily due to the inability to hold in-person coordination meetings, conduct capacity-building activities, and carry out field visits. Public offices and many private companies were closed from March 2020 until early 2021, when operations gradually resumed. Adaptive measures focused on shifting meetings and training activities from face-to-face to virtual formats, with the Steering Committee meeting held on 3 September 2020 serving

as a notable example of this transition. While these challenges were successfully addressed, they required a period of institutional adjustment that resulted in delays to the project schedule. Energy audits, in particular, had to be postponed until 2021, as they could not be effectively conducted through virtual modalities. No disruptions were experienced in relation to border closures or equipment imports, as demonstration projects had not yet entered the implementation phase. Overall, the adaptive measures adopted in response to COVID-19 were appropriate and effective, allowing the project to continue implementation under reasonable conditions; the pandemic affected project performance mainly in terms of timing and the need for extensions, rather than in the achievement of final outcomes.

The table below provides a summary of the ratings and finding discussed in Chapter IV. Overall, the project demonstrates a rating of 'Satisfactory'.

UNEP Evaluation Office Validation of Performance Ratings:

The UNEP Evaluation Office formally quality assesses (see Annex XII) management led Terminal Review reports and validates the performance ratings therein by ensuring that the performance judgments made are consistent with evidence presented in the Review report and in-line with the performance standards set out for independent evaluations.

The Evaluation Office assesses a Terminal Review report in the same way as it assesses the initial draft of a Terminal Evaluation report. It applies the following assumptions in its validation process:

– That what is being assessed is the contents of the report and the extent to which it makes a consistent and justifiable case for the performance ratings it records.

- That the consultant has, within the report, presented all the evidence that was made available to them.

- That the Review has been based on a robust Theory of Change, reconstructed where necessary, which reflects UNEP's definitions at all levels of results.

- That the project team and key stakeholders have already reviewed a draft version of the report and provided substantive comments and made factual corrections to the Review Consultant, who has responded to them. The Evaluation Office assumes, therefore, that it has received the Final (revised) version of the report.

In this instance the Evaluation Office assesses the quality of the Report at the 'Satisfactory' level and validates the overall project performance rating at the **'Moderately Satisfactory'** level.

Table 18: Summary of project findings and ratings

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
Strategic Relevance	**The project is highly relevant, aligning fully with national priorities, sectoral needs, and Costa Rica's efficiency and climate commitments**	**HS**	Rating validated	**HS**
Alignment to UNEP MTS, POW and strategic priorities	Strongly aligned with UNEP's MTS and PoW, advancing climate mitigation, resource efficiency, and waste management through strengthened public procurement frameworks	HS	Rating validated	HS
Alignment to Donor/Partner strategic priorities	Well aligned with MINAE, U4E and CABEI mandates, though execution capacity gaps affected full realization of expected collaborative contributions (financing)	HS	Rating Validated	HS
Relevance to global, regional, sub-regional and national environmental priorities	Fully aligned with GEF-6 climate mitigation and chemicals objectives, advancing market transformation for efficient appliances and supporting measurable emissions reductions	HS	Rating Validated	HS
Complementarity with relevant existing interventions/coherence	Integrates effectively with U4E, SE4ALL and SPPEL initiatives, avoiding duplication and enhancing coherence across national procurement, regulation and capacity-building efforts.	HS	Rating Validated	HS
Quality of Project Design	**Sound design with clear structure and logic, though financial and regulatory assumptions proved unrealistic, limiting scalability and requiring major redesigns**	**S**	Rating Validated	**S**
Nature of External Context	**Context moderately constrained implementation due to COVID-19, government transition, institutional turnover, and market shortages for efficient technologies.**	**MF**	Rating Validated	**MF**
Effectiveness	**Project achieved most planned outputs and contributed to outcomes, though financing barriers limited full realization of original market transformation ambitions**	**L**	**The sub-criteria under Effectiveness are rated from 'Highly Satisfactory' to 'Highly Unsatisfactory'. The rating is validated at 'Moderately Satisfactory'**	**MS**
Availability of outputs	Most outputs delivered with high technical quality; tracking tool and regulatory updates remain underused or incomplete	HL	Based on the evidence presented in the Review Findings section, outputs 1.2, 3.3B, 3.4B and 4.2 are partially delivered. This makes it less than 100% and according to the Ratings Matrix, the rating has been adjusted to 'Satisfactory'	S
Achievement of project outcomes	Outcomes for Components 1–2 achieved; Component 3 shifted from financing to guidelines and pilots, limiting intended transformational effect	L	As per the UNEP Glossary of Results Definitions and the Ratings Matrix, the evidence presented shows a partial achievement of outcomes 1, 2B and 3	MS

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
			. The rating has been adjusted to 'Moderately Satisfactory'	
Likelihood of impact	Early drivers strong, but long-term impact depends on institutionalizing energy management and resolving regulatory and financial barriers	ML	Rating Validated	ML
Financial Management	**Financial management was adequate, with transparent reporting and controls, though CABEI's turnover and structural limitations created inefficiencies in execution**	**S**	Rating Validated	**S**
Adherence to UNEP's financial policies and procedures	Compliance with UNEP financial policies was satisfactory, supported by ICA and PCA agreements, standardized templates, and validation through financial audits	HS	Rating Validated	HS
Completeness of project financial information	Project financial information was complete and compliant with UNEP reporting formats, supported by all required documentation and confirmed through audit processes.	HS	In the Review Findings Section above, the rating given by the reviewer is 'Satisfactory' Furthermore, as per the evidence presented in the review, the audit report was neither finalised nor did it have a management response and as per the Ratings Matrix, the rating is adjusted to 'Moderately Satisfactory'	MS
Communication between finance and project management staff	Communication was adequate but affected by frequent Project Manager turnover, requiring repeated guidance, capacity building, and extended timelines for financial reporting	MS	This is no longer a sub-criterion under Financial Management. Please refer to the latest Review Criteria Ratings Matrix (June 2025).	N/A
Efficiency	**Execution was generally efficient with strong adaptive management, despite delays from COVID-19, procurement rigidity from CABEI and key personnel turnovers.**	**MS**	Rating Validated	**MS**
Monitoring and Reporting	**Monitoring systems were satisfactory, with regular reporting supporting adaptive decisions, though indicator gaps limited output-level precision**	**S**	Rating Validated	**S**
Monitoring of project implementation	Monitoring was generally effective and supported adaptive decisions, though limited output indicators and partial SMART compliance constrained more precise performance tracking	S	Rating Validated	S
Project reporting	Project reporting was timely and compliant with UNEP requirements, providing clear information for oversight, though occasional gaps in detail limited completeness	S	Rating Validated	S
Sustainability	**Sustainability is moderately likely, supported by institutional mechanisms and guidelines, but weakened by unresolved financial and regulatory barriers**	**ML**	**Rating Validated at 'Moderately Unlikely'**	**MU**

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
Socio-political sustainability	Strong government commitment to efficiency supports continuity	HL	The evidence presented in the Review Findings narrative above and checked against the Ratings Matrix suggests a high dependency and 75-99% mitigation and thus the rating is adjusted to 'Likely'.	L
Financial sustainability	Financial sustainability is weak given absence of viable financing mechanisms, limiting large-scale replacement and long-term investment capacity	ML	The evidence presented in the Review Findings narrative above and checked against the Ratings Matrix suggests a high dependency and moderate mitigations - rating adjusted to 'Moderately Unlikely'	MU
Institutional sustainability	Institutional structures such as the SICOP working group and updated norms strengthen sustainability, pending broader adoption of energy management	L	The evidence presented in the Review Findings narrative above and checked against the Ratings Matrix suggests a high dependency on institutional support - especially from MINAE for enforcement - and evidence presented in the report suggests that mitigation measures are at 75-99% - rating adjusted to 'Moderately Likely'	ML
Factors Affecting Performance	**Overall performance was influenced by strong technical collaboration but constrained by minor execution constraints, regulatory barriers, key personnel turnover and limited integration of monitoring and gender considerations**	**MS**	**Rating Validated at 'Satisfactory'**	**S**
Quality of project management and supervision	Management showed strong adaptability and coordination, yet CABEI's limited capacity and frequent PM turnover affected efficiency, timeliness and operational follow-through	S	This rating is an average of the sub criteria below and hence the Rating Validated holds.	S
UNEP/Implementing Agency:	UNEP provided solid and timely supervision, guiding critical adjustments and ensuring compliance.	HS	The rating in the Review Findings Section above was not given specifically for this sub criterion. Rating Validated	HS
Partners/Executing Agency:	CABEI and U4E demonstrated commitment to the project's execution and continuity, despite challenges during the redesign phase and frequent turnover of key personnel.	S	Based on the evidence presented in the Review Findings section above and checked against the Ratings Matrix, the rating has been adjusted to 'Moderately Satisfactory'.	MS

Criterion	Summary assessment	Rating	Justification for any ratings' changes due to validation (to be completed by the UNEP Evaluation Office – EOU)	EOU Validated Rating
Stakeholders' participation and cooperation	Collaboration among MINAE, U4E and ICE was strong, while inconsistent engagement from CABEI and some institutions limited continuity and slowed decision-making	S	The rating in the Review Findings section above is 'Highly Satisfactory' and the rating is validated at 'Highly Satisfactory'	HS
Responsiveness to human rights and gender equality	Gender and rights considerations were acknowledged but not systematically integrated, with indirect benefits through training rather than explicit gender-responsive measures	MS	The rating in the Review Findings section above is 'Moderately Unsatisfactory' and the rating is validated at 'Moderately Unsatisfactory'	MU
Environmental and social safeguards	The project carried out an appropriate ESS screening during the design stage, but follow-up monitoring was limited in demonstration projects impacts.	S	Rating Validated	S
Country ownership and driven-ness	MINAE and ICE demonstrated strong ownership, driving technical progress, though shifts in government priorities intermittently reduced institutional momentum	S	The rating in the Review Findings section above is 'Moderately Satisfactory' and the rating is validated at 'Moderately Satisfactory'	MS
Communication and public awareness	Communication activities supported awareness of efficient procurement, but limited visibility and fragmented outreach reduced broader public-sector engagement and sustained behavioural change	MS	Rating Validated	MS
Overall Project Performance Rating		**S**	**Rating Validated at 'Moderately Satisfactory'**	**MS**

B. Lessons learned

Specific lessons on how human rights and gender equity issues have been successfully integrated into project delivery and/or how they could have could have been taken into consideration, should be highlighted.

Lesson Learned #1:	**Regulatory Feasibility Must Be Validated Before Designing Financial Mechanisms**
Context/comment:	The project assumed that a public-sector Revolving Loan Fund (RLF) could operate within Costa Rica's regulatory framework. However, consultations in 2022 with the Treasury revealed binding restrictions on long-term public borrowing, sovereign guarantees, and approval cycles. These constraints—absent from the risk analysis and not validated during design—made the RLF unfeasible and required a full redesign of Component 3, reducing long-term impact potential. Pre-design regulatory assessments, particularly for public financing instruments, are essential to confirm feasibility and avoid major redesigns during implementation. This lesson is widely applicable to any project introducing new financial instruments in regulated public environments. Early legal due diligence, involving all competent authorities, helps ensure that assumptions embedded in the Theory of Change reflect the real enabling environment and avoid systemic risks to scalability
Cross-reference(s) to relevant paragraphs	#71, #93, #124

Lesson Learned #2:	**Executing Agency Selection shall Prioritize not only Management capacity but also Technical knowledge and procurement flexibility**
Context/comment:	CABEI was selected for its expertise in managing energy projects and its track record in financial instruments at both the local and regional levels. , expecting leadership in developing the RLF. Once the RLF proved unviable, CABEI's role became less relevant: limited knowledge in technical aspects of energy-efficiency in a set of activities and procurement constraints for third-party equipment. U4E's technical strengths ultimately became key to delivering outputs. Execution effectiveness depends not only on financial experience but also on an agency's operational flexibility, sectoral networks, and technical leadership capacity. This lesson is relevant across GEF and UNEP portfolios: when projects hinge on specialized technical execution, agencies must be selected based on demonstrated ability to lead that component—not solely on thematic proximity or financial management credentials.
Cross-reference(s) to relevant paragraphs	#109-111, #118-119, #121, #129

Lesson Learned #3:	Embedding Dedicated Funds in Project Design Creates Timing and Efficiency Risks
Context/comment:	The design assumed that the project would establish a dedicated financing mechanism (RLF). In practice, creating such instruments requires extensive legal structuring, fiduciary arrangements, operating manuals, investment policies, and agreement across multiple institutions—processes that rarely align with the duration of a medium-sized GEF project. Even when feasible, standalone funds introduce administrative costs that may undermine long-term sustainability. Alternative models—such as integrating project resources into existing green financing platforms or establishing pre-existing umbrella funds with the ability to host sub-funds—may be more efficient and scalable. This lesson is relevant for projects exploring green financing instruments: unless institutional and regulatory mechanisms already exist, embedding fund creation in project design may overestimate feasibility and compromise delivery timelines
Cross-reference(s) to relevant paragraphs	#93, #124

Lesson Learned #4:	Motivated Institutions and Coordinated Technical Work Are Catalysts for Scalable Results
Context/comment:	Despite significant implementation challenges, strong collaboration among MINAE, ICE, INTECO, U4E and other agencies enabled major achievements: updated testing norms, modernized SICOP catalogues, high-quality audits, and demonstration projects. These outputs required not only technical expertise but sustained engagement from motivated individuals and institutions. The project demonstrated that committed working groups, clear technical leadership and continuous dialogue can compensate for operational constraints elsewhere in the execution structure. This lesson has broad applicability: inter-institutional coordination and motivated technical teams are fundamental drivers for policy uptake, regulatory strengthening, and the creation of durable market conditions—particularly in public procurement and energy-efficiency programmes
Cross-reference(s) to relevant paragraphs	#104, #122, #129, #131

Lesson Learned #5:	Early Gender Analysis Strengthens Design and Sector Engagement
Context/comment:	The project did not conduct a gender analysis nor include gender-responsive indicators, limiting its ability to integrate gender considerations into design, monitoring, and sector engagement. Although basic measures—such as non-discrimination in trainings, balanced invitations, and sex-disaggregated data—were applied, the absence of explicit gender objectives reduced the project's capacity to address barriers in a traditionally male-dominated sector.During implementation, positive practices emerged organically, including women in leadership roles within CABEI's PM team and balanced participation in technical trainings. However, additional gender-responsive communication and visibility actions could have strengthened impact. The lesson is widely applicable: conducting early gender analysis and establishing targeted indicators enables projects to better promote inclusion, highlight women's roles in energy efficiency, and contribute to UNEP's broader gender-equality commitments.
Cross-reference(s) to relevant paragraphs	#132-133

C. Recommendations

Recommendation #1:	Operationalize and Integrate the Energy-efficiency Tracking Tool
Challenge/problem to be addressed by the recommendation:	The tracking tool (Output 1.2) was developed but remains underutilized due to incomplete operationalization, limited institutional integration, and absence of a defined reporting pathway—reducing its potential to support monitoring, compliance and data-driven decisions. It shall be integrated into PGAI reporting routines, enabling upload of evidence on energy performance and end-of-life disposal.
Cross-reference(s) to relevant paragraphs	#94–95; Output 1.2 - Key Observations
Priority Level:	High
Type of Recommendation	Project level
Responsibility:	MINAE (DIGECA), ICE
Proposed implementation time-frame:	12 months (tracking tool full specifications based on a gap analysis within key users, and beta version available). 24 months (Functional version in MINAE's server or within institutions that provide technical support, operationalized in high-energy consumers). The implementation of the tracking tool will be optional for high-energy consumers that have already advanced in energy management processes—such as ISO 50.001—and that already have reporting tools validated within the PGAI framework.

Recommendation #2:	Strengthen PGAI Adoption and Institutional Energy Management
Challenge/problem to be addressed by the recommendation:	Most public institutions lack structured energy management practices, sectoral PGAIs emphasize environmental aspects over energy, and focal points are not consistently designated—limiting sustainability and scalability of efficiency actions. MINAE should insist on annual reporting of energy indicators, use of the tracking tool, and training requirements. Tracking tool training shall be included in PGAI's annual training programme.
Cross-reference(s) to relevant paragraphs	#94–95; energy audits findings; institutional engagement observations
Priority Level:	High
Type of Recommendation	Partner level
Responsibility:	MINAE (DIGECA),
Proposed implementation time-frame:	12 months (primary stage for awareness, focal points designated within high-energy consumers, schedule for training), 24 months (operationalized)

Recommendation #3:	Establish a Follow-up Programme with Demonstration Project Beneficiaries
Challenge/problem to be addressed by the recommendation:	Demonstration projects created momentum but lack systematic follow-up, limiting their catalytic potential for broader sector replication—particularly in hospitals and large institutions. Programme should be focused in monitoring performance, identify replication opportunities, and support preparation of second-generation EE projects.
Cross-reference(s) to relevant paragraphs	#77–78 - Institutional uptake
Priority Level:	Medium
Type of Recommendation	Project level
Responsibility:	MINAE
Proposed implementation time-frame:	6 months

Recommendation #4:	**Design Incentives to Mobilize ESCOs for Public Sector Energy Efficiency with proper financial mechanism for investments**
Challenge/problem to be addressed by the recommendation:	The public sector lacks dedicated technical support for project preparation, and ESCO participation is minimal. Without structured incentives, project pipelines will remain shallow and financing mechanisms—current or future—will not achieve scale. It is recommended to consider a mechanism that provides financial support (partial or full) from MINAE over a defined period of time (e.g., three years) and within a capped budget. The RLF proved unfeasible due to regulatory constraints, and public institutions have limited budgets to support large-scale energy-efficiency projects. A re-designed financing mechanism that is both legally and financially viable—potentially leveraging electricity distribution utilities as the operational arm for audits, procurement, and repayment under sovereign guarantees—could enable scalable investments while remaining aligned with national legal frameworks. Funding for the dedicated fund could be mobilized from the utilities themselves, multilateral development institutions, and concessional financing sources.
Cross-reference(s) to relevant paragraphs	#35–37; #71–72; #129–130
Priority Level:	Medium
Type of Recommendation	Partner level
Responsibility:	MINAE
Proposed implementation time-frame:	12 months

ANNEX II - REVIEW FRAMEWORK

The general review questions will centre on relevance, effectiveness, efficiency, results, sustainability and gender. Specific questionnaires will be designed for each stakeholder which will not be included in this report to protect the interviewees identities and promote information sharing.

Relevance

- Does the project align with the priorities of your institution?
- Does the project fit with national and local environment priorities?
- Did the project's concept come from local and/or national stakeholders?
- Were those stakeholders sufficiently involved during project development?
- Has this project been relevant and effective? Would it need to be changed to be more relevant and effective?
- How did the project governance, oversight and accountability worked?

Effectiveness

- Is the project's impact likely to be met?
- Which factors supported or hindered the project's success?
- Are there any risks or barriers that remain to achieve the project's impact?
- Have the assumptions and drivers for impact established in the (implicit) TOC held true?
- Has the sequence of actions planned at the design stage been effective for outcome delivery or did it need to be redesigned?
- Do stakeholders perceive the outcomes of the project have been achieved?
- Have gender, inclusion and other cross-cutting issues been properly taken into consideration in the project's design and implementation?
- To what extent has management been able to adapt to contextual changes and emerging needs?

Efficiency

- Are budgets and expenditures in line with international standards?
- Has the project design been efficient for achieving planned results?
- Has the project delivery been delayed? Why? Has it affected its cost-effectiveness?
- What was the effective co-financing contribution from other stakeholders to project implementation?
- Did the project mobilize additional resources towards its impact?

Results

- Have all the outputs been delivered? Did they contribute to the outcomes and impact?
- Are the outcomes likely to be achieved? Are they effectively contributing to the impact?
- Are the impacts likely to be achieved? Which is their likely scale?

Sustainability

- Are project results dependent on continued economic support? If so, will those resources be available to sustain the project results after closure?
- Have the relevant stakeholders taken ownership of the results? Are they interested in maintaining them?
- Do relevant stakeholders have the necessary capabilities to maintain those results?
- Are the results exposed to socio-political risks or other institutional, environmental or governance risks?

Gender

- How did the project include gender equality and women's empowerment at the design stage?
- How did the project include gender equality and women's empowerment at the implementation stage?

ANNEX III -STAKEHOLDERS CONSULTED DURING THE REVIEW

People consulted during the Review

Organisation	Position	Role in the project	Gender
UNEP	Portfolio manager	PSC Member	M
UNEP	Task manager	PSC Member	F
UNEP	Project specialist	Project implementation follow-up	F
UNEP	Risk management specialist	Project implementation follow-up	F
MINAE	Energy Director	PSC Member	M
MINAE	Energy Directorate expert	PSC Member – Technical liaison	F
CABEI	Strategic Programs Executive	Project Manager	F
CABEI	Strategic Programs Executive	Project Manager (former)	F
CABEI	Country Manager	Internal support PM team	M
U4E	Programme Officer in Climate Change Unit	Technical Coordinator	M
ICE	Energy Efficiency Laboratory (LEE) Manager	Technical liaison	M
CIRE S.A.	President-Founder	Audit Programme Manager	M
CIRE S.A.	Operations and Supply Chain Manager	Technical Coordination of Audit programme	F
BETTERGY	CEO	Consultancy Coordinator	M
BETTERGY	Operations Manager	Consultancy Manager	F
BETTERGY	Innovation and Funding Strategist	Consultancy Supportive role	M
TICR	Energy and Environment Consultant	Technical liaison of Bettergy in Costa Rica	M
TICR	Industry Management Engineer	Consultancy liaison	M
BEIRUTE	Commercial and Engineering Manager	PIMA's Project - Leader	M
BEIRUTE	Industry Sales	PIMA's Project – Tender head	M
BEIRUTE	Project developer	PIMA's Project – Developer/Engineering head	M
Beneficiaries: CNFL	Sustainability Unit Manager	Technical liaison	M
Beneficiaries: CNFL	Sustainability Unit expert	Technical support	F
Beneficiaries: Hospital Blanco Cervantes	Engineering and Maintenance Coordinator	Implementation liaison	M
Beneficiaries: Hospital Blanco Cervantes	Engineering and Maintenance Sector	Implementation liaison	M
Beneficiaries: PIMA	Head of National Refrigeration Network Maintenance	Project Leader	M
Beneficiaries: PIMA	Maintenance Manager at PIMA	Technical leader	M
FORTECH	Operations manager	Project liaison	M

ANNEX IV - KEY DOCUMENTS CONSULTED

Project design documents

- CEO Endorsement request
- Signed PCA – CABEI

Project revisions and management

- Project steering committee minutes
- Project revisions

Project monitoring

- Procurement and expert contracts
- Inventory reports
- Co-finance reports
- Expenditure reports
- Disbursements
- Cash advance reports
- Financial audit report
- PIRs 2020 to 2025
- HYPR 2019 to 2024
- Project Final report

Project Deliverables

Component 1

- Report on public institutions with the highest energy consumption
- List of institutions and reports of energy audits (20)
- Final report on the results of energy audits
- User guide for the tool to track the procurement of efficient equipment

Component 2

- Report on standards to be updated within the framework of the project
- Reports containing Draft Standards (8)
- Catalog of companies offering energy-efficient goods and services in SICOP
- Framework for updating catalogs and report on the update of data sheets and catalog
- Training report for efficient public procurement (A, B, and C)

Component 3

- Methodology for selecting demonstration projects based on the energy diagnosis
- Operational Manual for the procurement of efficient appliances in public buildings
- Report on implementation projects (PIMA and Hospital Blanco Cervantes)
- Communication and outreach materials for public building managers on procuring energy-efficient appliances and services (4 videos)
- Report on the financial feasibility studies of energy-efficiency projects in public buildings for use by financial institutions and private-sector providers (Bettergy)
- Open-source Excel tool for calculating the financial viability of building energy-efficiency projects for financial institutions and private-sector service providers
- Report on training sessions for financial institutions on calculating the financial viability of building energy-efficiency projects

Component 4

- Diagnostic report on the current processing capacity of authorized waste handlers providing end-of-life integrated management services
- Specifications of materials purchased, installed, and subsequently donated to beneficiaries for the environmental management of end-of-life products
- Issuance of a new framework agreement on the integrated end-of-life management of lighting, refrigeration, and air-conditioning appliances, to be adopted by public-sector procurement platforms
- Report on the methodology to establish recovery targets for selected replaced appliances

- Report on training sessions on legislation related to special waste integrated management and capacity strengthening (D, E, F)
- Information and dissemination actions: communication strategy, development of brand guidelines, MINAE website content, survey and interview design

Reference documents

- 2015 Public Sector Energy Survey Report.
- Technical Proposals from awarded companies in demonstration projects.
- Terms of Reference (ToR) for Terminal Review

ANNEX V - REVIEW ITINERARY

Date	Location	Institution	Position
14/10/2025			
	Virtual	UNEP	Portfolio Manager
	Virtual	U4E	Programme Officer (Climate Change Unit)
20/10/2025			
	San José	CABEI	Project Manager Strategic Programs Executive
	San José	CIRE	Audit Programme Manager Technical coordination
21/10/2025			
	San José	MINAE	Energy Director Energy Directorate Expert
	San José	Refrigeración Industrial Beirute	PIMA's project leader Tender's head Project Technical developer
22/10/2025			
	San José	CNFL Waste Management Plant	Sustainability Unit Manager Sustainability Unit Expert
	San José	PIMA	Head of National Refrigeration Network Maintenance Technical Project Leader (Maintenance Manager)
23/10/2025			
	Virtual	Bettergy	CEO Consultancy Coordinator Technical liaison Technical (local) liaison (TICR)
	San José	Costa Rican Institute of Electricity (ICE)	LEE Manager & Technical liaison
	San José	Hospital Blanco Cervantes	Engineering and Maintenance Head Technical liaison
18/12/2025			
	Virtual	UNEP	Finance and Budget Assistant

ANNEX VI - ENVIRONMENTAL AND SOCIAL SAFEGUARDS ASSESSMENT

The analysis carried out during the design stage did not use the updated UNEP checklist; however, in order to maintain traceability, the reviewer identified the elements available in Annex N of the ProDoc and aligned them with the updated ESS template.

ESS PLANNING AT PROJECT DESIGN	
List any ESS issues identified at project design (e.g. SS 1.7, SS 2.3, etc.)[27]	3.2. The project involves or leads to the generation of waste (both hazardous and non-hazardous). 3.3. The project involves or lead to the manufacture, trade, release, and/or use of hazardous materials and/or chemicals
For any ESS issues identified at project design, were mitigation strategies developed (Y/N)? (If yes, briefly describe)	**YES**. Fluorescent lights contain small levels of mercury. Refrigerators and air conditioners contain refrigerant gas. The project aimed to replace conventional and obsolete lighting, air conditioning and refrigeration appliances. At a macro-scale, project strengthened national capacities for environmentally sound end-of-life of replaced appliances. At a micro-scale, the project had a plan for any waste produced from the replacement of conventional appliances, and included capacity building by the acquisition of specialized equipment.
Were any gaps in ESS issues identified at the review inception phase (Y/N)?(If yes, briefly describe)	**NO**

ESS MONITORING AT PROJECT IMPLEMENTATION	
Is there evidence that the potential emergence of ESS issues was actively monitored during project implementation (Y/N)?[28](If yes, briefly describe)	**NO**
Is there a justification for the absence of ESS monitoring (Y/N)? (If yes, briefly describe[29])	The Project procured specialized equipment and donated it in 2025 to authorized waste handlers, ensuring the capacity to process the corresponding materials. The public procurement catalogue incorporated environmental management requirements for these appliances, providing a framework for their proper handling at the time of replacement. These factors indicate that conditions were in place for the appropriate management of waste. These elements were sufficient during the design stage, which did not foresee the implementation of demonstration projects. When these activities and funds were later added, no validation was carried out to ensure that the system was operational and being used by public institutions.

[27] Select from the list of Environmental and Social Safeguards Risks in Table 1 of the template (tool 14, Safeguards Assessment Template).

[28] **Low risk:** Negative impacts minimal or negligible: no further study or impact management required.

Moderate risk: Potential negative impacts, but limited in scale, not unprecedented or irreversible and generally limited to programme/project area; impacts amenable to management using standard mitigation measures; limited environmental or social analysis may be required to develop an Environmental and Social Management Plan (ESMP). Straightforward application of good practice may be sufficient without additional study.

High risk: Potential for significant negative impacts (e.g. irreversible, unprecedented, cumulative, significant stakeholder concerns); Environmental and Social Impact Assessment (ESIA) (or Strategic Environmental and Social Assessment (SESA)) including a full impact assessment may be required, followed by an effective comprehensive safeguard management plan.

[29] For instance, during COVID, access to the field may have been restricted

MANAGEMENT RESPONSIVENESS DURING PROJECT IMPLEMENTATION	
Identify the ESS issues/events triggered[30] by the project.[31]	The implementation of the demonstration projects at PIMA and Hospital Blanco Cervantes generated hazardous waste from lamps and refrigerant gases due to equipment replacement. There is no evidence regarding the final disposal of these materials, although it is presumed that they were managed appropriately through authorized waste handlers.
Describe consequences of ESS issues/events during project implementation.	There is no evidence of negative consequences, as the ultimate disposal pathway remains unknown.
Describe the management response and identify supporting documentation.[32,33]	There is no evidence of an active management response.
Were negative ESS effects offset by management response (Y/N)? (If yes, briefly describe)	No, as there was no management response on this issue

[30] 'Triggered' refers to environmental or social issues/events that are caused or exacerbated—directly or indirectly—as a result of the project's activities, interventions, or presence.

[31] Select from the list of Environmental and Social Safeguards Risks in Table 1 of the template (tool 14, Safeguards Assessment Template).

[32] For most low-moderate risk projects, good practice approach may be sufficient. Project should demonstrate safeguard management approach in the project activities, budget, risks management, stakeholder engagement or/and monitoring segments of the project document to avoid or minimize the identified potential risks without preparing a separate safeguard management plan.

[33] E.g., GEF Project Implementation Report (PIR), Progress Report, Minutes, etc.

ANNEX VII - COMMUNICATION AND OUTREACH TOOLS

Main websites:

- ✓ MINAE: https://www.minae.go.cr/energia/Proyectos%20de%20Cooperacion%20Internacional.aspx (Proyecto de Desarrollo de un Mercado de Eficiencia Energética)
- ✓ CABEI: https://www.bcie.org/paises-socios/fundadores/costa-rica/proyecto-en-eficiencia-energetica-en-costa-rica (link is not longer available)

Videos (available in YouTube)

- ✓ EE long version – without subtitles
- ✓ EE long version – Spanish subtitles – link
- ✓ EE long version – Subtítulos en inglés - link
- ✓ EE short version – Spanish subtitles - link
- ✓ EE short version – English subtitles - link

Case studies, assessments, energy audits, etc. are available mainly in websites.

Presentations of training sessions are only listed, sent by the EA to the reviewer:

- ✓ Workshop: efficient appliances acquisition via SICOP
- ✓ Training sessions: Executive Mandate Nº 11 MINAE, testing facilities at LEE, use of catalogue at SICOP
- ✓ Workshop: training on tracking tool to assess energy savings and benefits
- ✓ Workshop: Methodology to determine recovery goals of WEE
- ✓ Workshop: Assessment of legal framework for collection and recovery of WEEE

ANNEX VIII - BRIEF CV OF THE REVIEWER

Name	Pablo Caldeiro Sarli
Profession	Industrial Mechanical Engineer
Nationality	Uruguay
Country experience	Europe: Spain Americas: Uruguay, Argentina, Brazil
Education	UDELAR – University of the Republic, Uruguay – Engineer Degree EUDE Business School, Spain – Master in Renewable energies and Environment IEEJ, Japan – Specialization in Energy Policies Fundación Bariloche, Argentina – Specialization in Tariffs and Regulation

Short biography

Pablo Caldeiro is an independent consultant with more than 15 years of experience in the energy field, especially in renewable energies, contributing from the public sector to develop wind energy in Uruguay, through the design and implementation of public policies.

He has worked for the Ministry of Industry, Energy and Mining of Uruguay, in close interaction with different government offices and agencies, industrial chambers, public service companies, international experts, public service companies, suppliers and developers, and the financial sector.

His work includes assessment for renewable energy projects to be installed in the country, mainly those presented through tenders, being the state counterpart to the financing entities, in order to provide the guarantees of the regulatory framework and techniques to support long-term investments.

He also has shared experience in the region through OLADE meetings, triangular aid, and technical working groups in Irena meetings to evaluate projects presented to the Abu Dhabi fund.

Since 2022 is the energy expert in the Investment Committee of the Renewable Energy Innovation Fund (REIF) – Uruguay, supporting second energy transition projects and technologies as Heat Pumps, Hydrogen, Power-to-x, and Electro mobility.

Since 2024 is an external consultant for the Latin American Development Bank (CAF), supporting structuring of operations and energy advisor.

Key specialties and capabilities cover:

Renewable energies, Energy efficiency, Electric mobility, multi-stakeholder approach, Public Policies design and evaluation, Project Assessment.

Selected assignments and experiences

Independent reviews/evaluations:

Reviews for UNEP

2023 – GEF 5299 Bolivia MTR - Delivering the transition to energy efficient lighting

2023 – GEF 10087 Chile MTR - Accelerating investment in efficient and renewable district energy systems in Chile

2024 – GEF 5287 Panamá TR - Solar Water Heater Market Development Project in Panama

ANNEX IX - GEF PORTAL INPUTS (FOR GEF FUNDED PROJECTS)

Question: What was the performance at the project's completion against Core Indicator Targets? (*For projects approved prior to GEF-7[34], these indicators will be identified retrospectively and comments on performance provided*[35]).

Response:

At project completion, performance against the relevant GEF Core Indicators was moderately satisfactory. Under Core Indicator 6 (GHG emissions mitigated), the project contributed to the enabling conditions needed to achieve the long-term target of 330,328 tCO_2eq in direct reductions by 2035, barely surpassing it according to updated U4E calculations. Tracking tool was not able to use as means of verification as it was not operating. Under Core Indicators 9 and 10 (reduction and environmentally sound management of hazardous chemicals and materials), the project exceeded its target for mercury recovery capacity—surpassing the equivalent of 18,000 fluorescent tubes—while progress on refrigerant-gas management fell short of the project target, with 7,090 lb of storage capacity installed against the planned 9,000 lb. Notwithstanding this shortfall, field verification confirmed that national waste-management operators already possessed sufficient processing capacity, ensuring that environmentally sound practices remain viable beyond the project.

Question: What were the progress, challenges and outcomes regarding engagement of stakeholders in the project/program as evolved from the time of the MTR? *(This should be based on the description included in the Stakeholder Engagement Plan or equivalent documentation submitted at CEO Endorsement/Approval)*

Response:

The project did not undertake a MTR.

Stakeholder engagement strengthened over the course of implementation, with MINAE—through the Directorate of Energy and DIGECA—maintaining a central leadership role in regulatory updates, training, and oversight. Technical partners such as U4E deepened their involvement after the redesign of Component 3, assuming additional responsibilities that ensured continuity of implementation and improved the quality of procurement and demonstration activities. Other institutional actors, including INTECO, ICE and the SICOP team, contributed consistently to the updating of standards, catalogues and tracking tools, though participation from the Treasury and the Ministry of Health remained limited, constraining progress on financial and regulatory reforms initially envisioned. Demonstration-site beneficiaries such as PIMA and Hospital Blanco Cervantes became highly engaged, supporting implementation and initiating follow-up actions beyond project funding. CABEI maintained its commitment to project implementation and the achievement of results from the outset; however, constraints related to the procurement of goods for third parties emerged following the redesign of Component 3, and these responsibilities were reassigned to U4E. . Overall, stakeholder engagement evolved positively, enabling successful completion of core activities despite institutional gaps that limited progress in specific components.

Question: What were the completed gender-responsive measures and, if applicable, actual gender result areas? (*This should be based on the documentation at CEO Endorsement/Approval, including gender-sensitive indicators contained in the project results framework or gender action plan or equivalent*)

Response:

Although the project did not include a gender analysis, gender action plan, or sex-disaggregated indicators in its original design, several gender-responsive measures were implemented during execution. The project promoted women's participation in leadership roles—three of the five Project Managers appointed by CABEI were women—and ensured balanced participation of women in training activities delivered by partners such as Bettergy and INTECO. Gender considerations were integrated into outreach and capacity-building activities through non-discrimination guidelines and inclusive invitation practices, though opportunities to embed gender equality more visibly in communication materials were not fully realized. While no specific gender result areas were defined at CEO endorsement, the project contributed indirectly to strengthening women's representation in a traditionally male-dominated energy-efficiency sector, particularly through their involvement in technical training and project management functions.

Question: What was the progress made in the implementation of the management measures against the Safeguards Plan submitted at CEO Approval? The risk classifications reported in the latest PIR report should be verified and the findings of the effectiveness of any measures or lessons learned taken to address identified

[34]The GEF is currently operating under the seventh replenishment period of the GEF Trust Fund covering the period July 1, 2018 to June 30, 2022. The GEF Portal Reporting Guide for FY20 Reporting Process indicates that GEF-6 projects that have yet to map existing indicators to GEF-7 Core Indicators need to do so at MTR stage or (if already there) at the time of the TE. .(i.e. not GEF projects approved before GEF-6)

[35] This is not applicable for Enabling Activities

risks assessed. *(Any supporting documents gathered by the Consultant during this review should be shared with the Task Manager for uploading in the GEF Portal)*

Response:

The project implemented the safeguards measures outlined at CEO approval, focusing on the management of hazardous waste resulting from the replacement of lighting, refrigeration, and air-conditioning equipment. The principal risk—improper handling and disposal of special waste—was mitigated through the procurement of mercury-recovery and refrigerant-gas storage equipment, the establishment of a framework agreement within SICOP to enable public institutions to contract authorized waste handlers, and training activities targeted at environmental and procurement officials. These actions were reflected in the PIRs, which consistently rated safeguard risks as low. However, following the redesign of Component 3, no additional monitoring mechanism was introduced to verify end-of-life management at beneficiary sites, and therefore the effectiveness of the system could not be fully validated at project closure. Field interviews confirmed that national operators possess adequate processing capacity, but the absence of a dedicated follow-up process is a key lesson learned, underscoring the need for safeguards monitoring to remain robust even when project components are reformulated.

Question: What were the challenges and outcomes regarding the project's completed Knowledge Management Approach, including: Knowledge and Learning Deliverables (e.g. website/platform development); Knowledge Products/Events; Communication Strategy; Lessons Learned and Good Practice; Adaptive Management Actions? *(This should be based on the documentation approved at CEO Endorsement/Approval)*

Response:

The project implemented several elements of its Knowledge Management (KM) approach, including the development of a web-based tool for tracking efficient appliance procurement, the preparation of technical guidelines and operational manuals, and the delivery of training sessions and dissemination materials that supported learning among public institutions. Demonstration projects also generated practical lessons on procurement, installation, and performance of efficient technologies. However, challenges arose in ensuring sustained use and institutionalization of KM products: the tracking tool hosted by MINAE was not widely adopted by public entities, some communication materials and webpages (e.g., those previously hosted by CABEI) were no longer accessible at closure, and the communication plan remained limited in scope, focused on isolated activities rather than long-term awareness or knowledge retention. Adaptive management was demonstrated through the reformulation of Component 3, which generated new analytical products and guidance, though a more integrated KM strategy could have strengthened uptake and visibility. Overall, while the project produced useful technical knowledge and learning resources, opportunities to consolidate and systematize these outputs for broader and lasting engagement were only partially realized.

Question: What are the main findings of the review?

Response:

The review found that the project achieved most of its intended outcomes and successfully strengthened the foundations for energy efficiency in Costa Rica's public sector, notably through updated procurement standards, energy audits in high-consuming institutions, and the implementation of demonstration projects that showcased technical and economic feasibility. Strong leadership from MINAE and technical support from U4E were critical to maintaining project momentum, particularly after the redesign of Component 3, which became necessary due to regulatory barriers that prevented establishment of the revolving fund. Challenges included limited administrative flexibility from the Executing Agency, high turnover of Project Managers, and uneven engagement from key public-sector stakeholders such as the Treasury and the Ministry of Health. Knowledge management and communication outputs were delivered but not fully institutionalized, and gender considerations remained modest due to the absence of a structured gender framework. Overall, the project effectively delivered its core outputs, contributed to enabling conditions for long-term energy-efficiency improvements, and generated valuable lessons for future initiatives requiring stronger regulatory alignment, financial mechanisms, and institutional coordination.

ANNEX X – GEF CO-FINANCE

Confirmed sources of Co-financing for the project are listed by name and by type

Evidence for co-financing for the project arises from signed co-finance report with annexes for every partner. The project did not undertake a MTR.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Investment Mobilized	Amount ($) at CEO	Amount ($) at MTR	Amount ($) at TE
Recipient Country Government	MINAE	In-kind	Investment Mobilized	2,000,000	-	1,014,806
Others	CABEI	Loan	Investment Mobilized	500,000	-	500,000
GEF Agency	UNEP	In-kind	Investment Mobilized	25,000	-	30,000
Others	ICE	In-kind	Investment Mobilized	75,000	-	75,000
Others	COOPELESCA	In-kind	Investment Mobilized	253,505	-	195,267
Others	COOPEGUANACASTE	In-kind	Investment Mobilized	63,795	-	0
Others	ESPH	In-kind	Investment Mobilized	1,452,300	-	2,793,901
Others	CNFL	In-kind	Investment Mobilized	2,852	-	10,295
Private sector	NLTC	In-kind	Investment Mobilized	200,000	-	0
Private sector	Whirpool	In-kind	Investment Mobilized	100,000	-	0
Private sector	Mabe	In-kind	Investment Mobilized	300,000	-	0
Total Co-financing				4,972,452	-	4,619,269

ANNEX XI - IMPLEMENTATION PLAN OF RECOMMENDATIONS

Project Title and Reference No.: Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica (GEF 9283)

Contact Person (TM/PM):

	PLANS			
RECOMMENDATIONS	ACCEPTED (YES/NO/ PARTIALLY)	WHAT WILL BE DONE?	EXPECTED COMPLETION DATE	REPONSIBLE OFFICER/ UNIT/ DIVISION/ AGENCY
Operationalize and Integrate the Energy-efficiency Tracking Tool		Perform a gap analysis of the tracking tool to assess requirements/specifications with key institutions to ensure that the tool is aligned with user needs and interoperable with PGAI reporting. Prepare a beta version of the updated tracking tool to validate with key users. Develop a fully functional version of the tracking tool, preferably hosted on MINAE servers or within institutions that can ensure adequate technical support The implementation of the tracking tool will be optional for high-energy consumers that have already advanced in energy management processes—such as ISO 50.001—and that already have reporting tools validated within the PGAI framework.	31/1/2027 (Item 1) 31/1/2028 (Item 2)	MINAE (DIGECA), ICE
Strengthen PGAI Adoption and Institutional Energy Management		Prepare the schedule for PGAI's annual training programme, ensuring that the programme includes the definition of indicators and targets, and reporting using the tracking tool. Identify or formally designate PGAI focal points within a set of key public institutions with high energy consumption. Deliver PGAI's annual training in selected high-energy consumers, including tracking tool use.	31/1/2027 (Item 1 and 2) 31/1/2028 (Item 3)	MINAE (DIGECA)

	PLANS			
RECOMMENDATIONS	ACCEPTED (YES/NO/ PARTIALLY)	WHAT WILL BE DONE?	EXPECTED COMPLETION DATE	REPONSIBLE OFFICER/ UNIT/ DIVISION/ AGENCY
Establish a Follow-up Programme with Demonstration Project Beneficiaries		Monitor the results of the demonstration projects and assess their impact in terms of avoided energy consumption and economic savings. Identify opportunities, together with beneficiary institutions, to replicate demonstration projects and transfer the experience to similar institutions in the sector (e.g., hospitals, education facilities).	31/7/2026	MINAE
Design Incentives to Mobilize ESCOs for Public Sector Energy Efficiency with proper financial mechanism for investments		Design a support and incentive mechanism through which public institutions can request technical assistance from ESCOs to carry out energy audits, assessments, and pre-feasibility studies, enabling the development of a pipeline of concrete proposals to be incorporated into institutional budgets. It is recommended to consider a mechanism that provides financial support (partial or full) from MINAE over a defined period of time (e.g., three years) and within a capped budget. Assess and legally validate a long-term financing proposal for energy-efficiency projects (with paybacks exceeding one year), potentially through a dedicated fund that could leverage electricity distribution utilities as the executing arm for supply, installation, and repayment, potentially backed by sovereign guarantees. Funding for the dedicated fund could be mobilized from the utilities Themselves, multilateral development institutions, and concessional financing sources	31/1/2027	MINAE

ANNEX XII - QUALITY ASSESSMENT OF THE REVIEW REPORT

Review Title: Terminal Review of the UNEP Project: Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica

Consultant: Pablo Caldeiro Sarli

All UNEP Reviews are subject to a quality assessment by the UNEP Evaluation Office. This is an assessment of the quality of the review product (i.e. Main Review Report).

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
Section A: Executive Summary	Assessment	
1. Does the ***Executive Summary*** act as a concise, accurate standalone section, especially to inform decision-making? Consider how clearly and concisely the report presents: ● a clear summary of the review object ● review objectives, scope and methodology ● the overall project review rating ● a summary of main review findings, including key features of performance (strengths and weaknesses) ● summary responses to key strategic review questions ● summary of main conclusions, lessons learned and recommendations	Coverage/omissions: Most elements have been covered including key features of performance of both strengths and weaknesses. No mention of key strategic questions nor their responses Strengths/weaknesses: Abbreviations and acronyms were used haphazardly , sometimes with an introduction, sometimes without.	4.5
Section B: The Project	Assessment	
2. Does the report clearly describe the ***key parameters, scale and complexity of the evaluand***? Consider how well the report presents: ● an overview of the main issue that the project is trying to address ● timeline, including dates of project approval, duration and number of phases (where appropriate) ● geographic coverage (regions/countries) ● total secured budget and project financing, including a table with funding sources ● implementing and funding partners ● institutional context (i.e. UNEP sub-programme, Division, Branch etc) ● implementation structure with diagram ● UNEP results frameworks to which it contributes (e.g. PoW Direct Outcome) ● summary of results framework as stated in the ProDoc (or as officially revised) ● stakeholder groups organised according to relevant common characteristics ● whether the project has been evaluated in the past (e.g. mid-term, by an external agency, etc.) ● substantive or significant changes in design during implementation	Coverage/omissions: Well presented section with all aspects covered. Strengths/weaknesses: The sub section on intervention context (root cause) could have been shorter/summarised better. Key stakeholders such as private sector (banks) were not highlighted in this section	5.5
Section C: Review Methods and Theory of Change	Assessment	

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
3. Does the report present a clear, comprehensive and adequate description of the ***review methodology***? Consider how well it presents the following elements, and their adequacy based on the scope of the review: ● statement of the purpose of the review and the key intended audience for the review findings ● data collection methods and information sources ● justification for methods used (e.g. electronic/face-to-face interviews, qualitative/quantitative analysis) ● criteria and sampling strategies used to select stakeholders for consultations, and for sites/countries visited ● number and types of respondents *(including in a table broken down by gender)* ● strategies used to increase stakeholder engagement and response rate ● methods used to include the voices/experiences of different and potentially excluded groups (e.g. women, marginalised) ● data verification methods (e.g. triangulation) ● data analysis methods (e.g. scoring, thematic analysis) ● review limitations and mitigation measures (e.g. how these were addressed by the evaluator) ● consideration for ethics and human rights issues, including how anonymity and confidentiality were protected	Coverage/omissions: Most elements were covered except for the following: The criteria and sampling strategies used to select stakeholders for consultations and for sites visited is missing. No methods were described to include the voices/experiences of different and potentially excluded groups. Key strategic questions not outlined in this section either. Strengths/weaknesses: Despite the omissions highlighted above, this section was well written and easy to follow.	4.5
4. Does the report describe an assessment and reformulation of the ***Theory of Change***, and present an adequate articulation of the TOC causal pathways that were used to assess project performance (*narratively and diagrammatically)?* Consider how well the report presents: ● whether the project design included a TOC ● how the *TOC at* review [36] was designed (e.g. who was involved, etc) ● confirmation/reconstruction of results in accordance with UNEP definitions (*including reformulation table, which may have initially been presented in the Inception Report and should appear in the Main Review report.)* ● articulation of causal pathways ● identification of drivers and assumptions ● identification of key actors in the change process	Coverage/omissions: The reformulated TOC at review is presented with justifications. However, it is not clear who was involved or what documents were referred to when the TOC at review was designed. While the project design included a Theory of Change, in the reconstructed TOC at review there are still instances where the outputs and outcomes do not match the UNEP definitions as in indicated in the 01 UNEP Glossary of results definitions_December 2023.pdf: : Output 1.1 is deemed an activity that would result in Output 1.2. Outcome 1 is deemed to be an output as it describes how the public institutions with the highest energy consumption will showcase	3

[36] During the Inception Phase of the review process a *TOC at review Inception* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions), formal revisions and annual reports etc. During the review process this TOC is revised based on changes made during project intervention and becomes the *TOC at review*.

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	opportunities for replacing inefficient energy appliances to energy efficient appliances (demonstration project) Outputs 2.3 and 4.5- trainings delivered to 3 key actors is an activity. Outcome 2b - is an output which occurs as a result of outcome 2.3 on trainings given. Outcome 2 should have been re-worded to "the public sector is able to make informed (as a result of outputs 2.1, 2.2, 2.3 and 2.4) purchases of energy efficient appliances from suppliers that comply with energy efficiency specifications set by the framework Outputs 4.1 and 4.2 are deemed to be activities that lead to outputs 4.3 and 4.4 <u>Strengths</u> The identification of additional drivers and assumptions has made the TOC at review clearer.	
Section D: Evidence and Analysis	Assessment	
5. Is the report based on ***sufficient and adequate data*** and ***clear and credible evidence***? Consider how well the report presents: ● sufficient evidence that is consistent throughout the report ● evidence that is supported by data sources (e.g. quotes, reports, etc) ● evidence that is explicitly triangulated, unless noted as having a single source ● gaps in data are explained and justified ● data sources that are reliable, adequate, sufficient for the scope of the review	<u>Coverage/omissions</u>: All elements were adequately covered in the report. <u>Strengths/weaknesses</u>: A deeper analysis of secondary data could have provided further insights into the successes of the project.	5
6. Does the report include ***rigorous analysis*** and ***logical findings***? Consider the extent to which the findings are: ● supported by clear analysis that is consistent with the evidence presented ● logical, clear and coherent ● aligned with UNEP's Criteria Ratings Matrix ● aligned with the review framework ● more than descriptions and provide insights into 'how' and/or 'why' the project performed a certain way ● balanced, presenting both successes and weaknesses	<u>Coverage/omissions</u>: Most elements were adequately covered in the report. <u>Strengths/weaknesses</u>: Not all findings are aligned with UNEP's Criteria Ratings Matrix	4.5
Section E: Review Findings	Assessment	
7. Does the report present evidence and analysis of project ***Strategic Relevance*** with respect to UNEP, partner and geographic policies and strategies at the time of project approval? Consider how well the report addresses: ● Alignment to the UNEP Medium Term Strategy (MTS), Programme of Work (POW) and Strategic Priorities	<u>Coverage/omissions</u>: Required elements are adequately addressed. <u>Strengths/weaknesses</u>: The section adequately describes the project's alignment and strategic relevance with respect to UNEP, donors Regional and Global priorities,	6

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
• Alignment to Donor/GEF/Partners Strategic Priorities • Relevance to Regional, Sub-regional and National Environmental Priorities • Complementarity with Existing Interventions: complementarity of the project at design (or during inception/mobilisation[37]), with other interventions addressing the needs of the same target groups.	and complementarity with existing interventions.	
8. Does the report present a summary of the strengths and weaknesses of the ***Quality of Project Design***, based on the detailed assessment presented in the Inception Report?	Coverage/omissions: Elements are adequately addressed. The summary table with ratings of the design elements assessed is also presented in this section. Strengths/weaknesses: A concise analysis of the project design's strengths and weaknesses is presented	[38]**NOT RATED**
9. Does the report recognise and describe, when appropriate, key features of the ***Nature of the External Context*** under which the project was implemented that limited the project's performance (e.g. conflict, natural disaster, political upheaval[39]), and how they affected performance?	Coverage/omissions: Required elements are adequately addressed. Strengths/weaknesses: This section highlighted a risk that was over looked in the project design and for which there was little to no adaptation measures - the reliance of importing energy efficient appliances increasing exposure to global supply chain pressures, including geopolitical disruptions, international conflicts, and climate-related events	[40]**NOT RATED**
10. Does the report present a well-reasoned, complete and evidence-based assessment of the ***Availability of Outputs*** to the intended beneficiaries? Consider how well the report presents: • a convincing, evidence-supported and clear presentation of the outputs made available by the project compared to its approved plans and budget • assessment of the nature and scale of outputs versus the project indicators and targets • assessment of the timeliness, quality and utility of outputs to intended beneficiaries • identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or	Coverage/omissions: Most elements were well addressed. However, there is no mention of positive or negative effects of the project on disadvantaged groups. Strengths/weaknesses: The reviewer provided a detailed and evidence-based assessment of the level of achievement of each output.	5.5

[37] A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.
[38] The Quality of Project Design criterion is not rated in this table because the majority of the analysis is presented in the Inception Report and the Final Terminal Review report only contains a summary.
[39] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team.
[40] The Nature of External Context is not rated in this table because it is not consistently applicable across all projects. Some review reports will simply record that there was no unexpected unfavourable external factors, while others may have to describe critical external events.

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
marginalisation (e.g. through disability).		
11. Does the report present a well-reasoned, complete and evidence-based assessment of the ***Achievement of Outcomes***, as a result of the uptake, adoption and/or implementation of outputs by the intended beneficiaries? This may include behaviour changes at an individual or collective level. Consider how well the report presents: ● a convincing and evidence-supported analysis of the uptake of outputs by intended beneficiaries ● assessment of the nature, depth and scale of outcomes versus the project indicators and targets ● discussion of the contribution, credible association and/or attribution of outcome level changes to the work of the project itself ● any constraints to attributing effects to the projects' work ● identification of positive or negative effects of the project on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).	Coverage/omissions: Most elements are addressed. However, there is no mention of positive or negative effects of the project on disadvantaged groups, especially in the case of the safe disposal of mercury from the lighting bulbs. Strengths/weaknesses: The reviewer has assessed the outcomes against the indicators rather than the uptake of outputs by the intended beneficiaries.	4.5
12. Does the report present an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to ***Likelihood of Impact***? Consider how well the report presents: ● an explanation of how causal pathways emerged and the resulting change processes ● an explicit discussion of how drivers and assumptions played out ● an explanation of roles played by key actors and change agents ● identification of any unintended negative effects of the project, especially on disadvantaged groups, including those with specific needs due to gender, vulnerability or marginalisation (e.g. through disability).	Coverage/omissions: Elements are adequately addressed. Strengths/weaknesses: The analysis includes an assessment on whether drivers, assumptions, outputs, outcomes and intermediate states were in place by the end of project implementation.	5.5
13. Does the report present an integrated analysis of all dimensions evaluated under ***Financial Management*** and include a completed 'financial management' table? Consider how well the report addresses the following: ● *adherence* to UNEP's financial policies and procedures ● *completeness* of financial information, including the actual project costs and actual co-financing used and explanation of any variances between planned and actual expenditures	Coverage/omissions: All elements are covered and presented in a table along with a summary. However, there is some detail lacking into the assessment of the adherence to UNEP's financial policies and procedures as per the ratings matrix including: timely approval of cash advances to partners, Regular analysis of actual expenditure against budget and workplan, Timely submission of regular expenditure reports (six-monthly and annual), Expenditure is within the approved annual budget (or a timely revision submitted/approved), Regular budget revisions made when relevant and for expenditure variations of 10% and above.	4

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
	Strengths/weaknesses: The ratings presented in this section differ to the one presented in the table in the conclusion section.	
14. Does the report present an integrated analysis of all dimensions evaluated under ***Efficiency***? Consider how well the report presents: ● cost-effective or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe ● implications of any delays and no cost extensions ● discussion of making use, during project implementation, of/building on pre-existing institutions, partnerships and complementarities with other initiatives, programmes and projects etc. ● the extent to which the management of the project minimised UNEP's environmental footprint.	Coverage/omissions: All aspects of the criterion were covered with detailed evidence presented. Strengths/weaknesses: The Findings section was well written.	5
15. Does the report present a well-reasoned, complete and evidence-based assessment of the project's ***Monitoring and Reporting***? Consider how well the report addresses the following: ● the quality of *monitoring of project implementation* (including use of monitoring data for adaptive management) ● the quality of *project reporting* (e.g. PIMS and donor reports)	Coverage/omissions: Omission: there is no mention on the quality of baseline data and that it is accurately and appropriately documented, of data being reported disaggregated by vulnerable/marginalised groups including gender, and whether the funds were specifically used for this activity. Strengths/weaknesses: This section presents an adequate assessment of the two dimensions under Monitoring and Reporting.	4
16. Does the report present an integrated analysis of all dimensions evaluated under ***Sustainability*** (i.e. the endurance of benefits achieved at outcome level)? Consider how well the report addresses the following: ● socio-political sustainability ● financial sustainability ● institutional sustainability	Coverage/omissions: All elements were adequately covered in these sections. Strengths/weaknesses: A concise analysis of each of the sub criteria was presented in this section.	5
17. Does the report present a well-evidence analysis of the ***Factors Affecting Performance***, either in this section or in cross-referenced sections? *These factors are not always discussed in stand-alone sections and may be integrated in the other performance criteria as appropriate. However, if not addressed substantively in this section, a cross reference must be given to where the topic is addressed, and that entry must be sufficient to justify the performance rating for these factors.* Consider how well the report addresses the following cross-cutting issues: ● quality of project management and supervision[41]	Coverage/omissions: All elements were adequately covered. Instances where cross referencing would have further enhanced the report include: Quality of Project Management and Response Strengths/weaknesses: A well written summary of the strengths and weaknesses of each of the factors was presented	5.5

[41] In some cases, 'project management and supervision' will refer to the supervision and guidance provided by UNEP to

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
• stakeholder participation and co-operation • responsiveness to human rights and gender equality • environmental and social safeguards • country ownership and driven-ness • communication and public awareness		
Section F: Conclusions, Lessons Learned and Recommendations	Assessment	
18. Do the ***Conclusions*** present a summative assessment of the evaluand as a whole, reflecting on prominent aspects of the project's performance? Consider how well the conclusions: • provide a compelling narrative and integrated assessment of project project's performance (i.e. achievements and limitations) • add deeper insights and analysis beyond the findings under each individual criterion • are derived from the synthesized analysis of evidence gathered during the review process • provide clear and succinct response to the key strategic questions • address the human rights and gender dimensions of the intervention explicitly (e.g. how these dimensions were considered, addressed or impacted on) • provide lessons that are rooted in real project experiences, describe the context from which they are derived, and do not duplicate recommendations	Coverage/omissions: All elements were adequately covered, including the findings from Efficiency. The responses to Key Strategic Questions were well written. Strengths/weaknesses: The section presents an integrated summary of the project's achievements, challenges, strengths and weaknesses.	5.5
19. Does the report present ***Recommendations*** for specific action to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results? Consider how well the recommendations: • are clearly formulated and logically derived from the findings and/or conclusions • are feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when • include at least one recommendation relating to strengthening the human rights and gender dimensions of UNEP interventions • represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations. NOTES: **(i)** In cases where the recommendation is addressed to a third party, compliance can only be monitored and assessed where a contractual/legal agreement remains in place. Without such an agreement, the recommendation should be	Coverage/omissions: All recommendations are clearly formulated and logically derived from the findings in the review, are feasible to implement within the time frame and resources available. However, they are all directed towards the Ministry of Energy and Environment and thus compliance can only be tracked up to relay of information, rather than actual implementation of the recommendations Strengths/weaknesses: No recommendation has been presented relating to strengthening human rights and gender dimensions of UNEP interventions	5

implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP. This includes providing the answers to the questions on Core Indicator Targets, stakeholder engagement, gender responsiveness, safeguards and knowledge management, required for the GEF portal.

Report Quality Criteria	UNEP Evaluation Office Comments	Final Report Rating
formulated to say that UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner. The effective transmission by UNEP of the recommendation will then be monitored for compliance. **(ii)** Where a new project phase is already under discussion or in preparation with the same third party, a recommendation can be made to address the issue in the next phase.		
Section G: Report Structure and Presentation	Assessment	
20. Is the report ***well-structured and complete***? Does it: ● follow the Evaluation Office structure and formatting guidelines ● include all required sections and annexes, as applicable ● not exceed 50 pages in length from the Executive Summary to the end of the Conclusion Does the report ***present*** information clearly and appropriately? Is it written: ● in clear and accessible language ● largely free from grammar, spelling and punctuation errors ● in an adequate and professional tone ● with the use of visual aids, such as maps, graphs tables and photos	Coverage/omissions: The report is complete and follows the Evaluation Office guidelines. It exceeds the recommended length by 8 pages. All the required Annexes are included in the report. Strengths/weaknesses: The report is clear and well written. The tone is professional and adequate for an official document. Graphs and tables convey key information. However, there was inconsistent use of acronyms and abbreviations, as well as mixing of tenses within the same paragraphs.	5
OVERALL REPORT QUALITY RATING		4.9

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the review report is calculated by taking the mean score of all rated quality criteria.

Rating the Report Quality Criteria

Rating (1–6)	Description
6	Provides all content with high quality.
5	Provides all content with minor weaknesses.
4	Provides most content with minor weaknesses.
3	Provides most content with significant weaknesses.
2	Omits substantive content with significant weaknesses.
1	Omits almost all content with major weaknesses.